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Annexes to the
Interim EPC-SPC Joint Report on Pensions

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Annex 1: Main features of pension systems in the EU

Pension arrangements are very diverse in the EU Member States, due to both different traditions on how to provide retirement income, and to different phases of the reform process of pension systems.

The large majority of pension systems in the EU 27 Member States are public pension systems. Still, several Member States have introduced occupational pension schemes and/or private mandatory and voluntary schemes. As documented by Table 1, pension arrangements are very diverse in the EU. The importance of occupational and private pension provisions varies across countries.

Regarding the type of pension benefit paid out by public earnings-related schemes, most Members States provide defined-benefit pensions, i.e. pension rights are defined in terms of earnings and service years, without a direct link to contributions. But recently, a number of Member States, including Sweden and some new Member States such as Bulgaria, Estonia, Latvia, Lithuania, Hungary, Poland and Slovakia, have switched part of their public pension schemes into private funded schemes. Typically, this provision is statutory but the insurance policy is made between the individual and the pension fund.

In most Member States, the core of the pension system is based on the statutory earnings-related old-age pension schemes. At the same time, the public pension system often provides also a minimum-guaranteed pension to those who do not qualify for the earnings-related scheme or have accrued only a small earnings-related pension. Minimum-guarantee pensions are usually means-tested and are provided either by a specific minimum pension scheme or through a general social assistance scheme. In a few Member States, notably in Denmark, the Netherlands and Ireland, the public pension system provides in the first instance a flat-rate pension, which can be supplemented by earnings-related private occupational pension schemes.

The type of benefits provided by the public pension systems differ across countries. Most pension schemes provide not only old-age pensions but also early retirement, disability and survivors' pensions. Some countries, however, have specific schemes for some of these benefit types; in particular, some do not consider disability benefits as pensions (despite the fact that they are granted for long periods), and in some cases they are covered by the sickness insurance scheme.

The financing method of the pension systems also differ across countries. Most public pension schemes are financed on a pay-as-you-go (PAYG) basis, whereby contribution revenues are used for the payments of current pensions. In most countries, minimum guarantee pensions are covered by general taxes. Earnings-related schemes are often subsidised to varying degrees from general government funds. Some specific schemes, notably public sector employees' pensions sometime do not constitute a well identified pension scheme but, instead, disbursements for pensions appear directly as expenditure in the government budget. On the other hand, some predominantly PAYG pension schemes have statutory requirements for partial pre-funding and, in view of the increasing pension expenditure, many governments have started to collect reserve funds for their public pension schemes.

While occupational and private pension schemes are usually funded, the degree of their funding relative to the pension promises may differ, due to the fact that future pension benefits can be related either to the salary and career length (defined-benefit system) or to paid contributions (defined-contribution system).

Table 1 - Pension schemes coverage in the 2009 Ageing Report

	Public pensions					Occupational pension scheme		Private pension scheme	
	Minimum pension / social allowance	Old-age pensions	Early retirement pensions	Disability pensions	Survivors' pensions			Mandatory private scheme	Voluntary Pension scheme
BE	MT - SA	ER	ER	ER (wage earner); FR (self-employed)	ER	V*		X	V*
BG	MT-SA	ER / FR	ER (before end 2010 pensions)	ER / FR	ER / FR	V*		M young (1960) M* (prof)	V*
CZ	FR	ER	ER	ER	ER	X		X	V*
DK	FR & MT	FR & MT	V	FR	FR*	V		X	V
DE	MT - SA*	ER	ER	ER	ER	V*		X	V*
EE	FR	FR (before 1999); ER (after)	X	FR (before 1999); ER (after)	FR (before 1999); ER (after)	X		M - young (1983)	V - old*
EL	MT	ER	ER	ER	ER	X		X	V*
ES	MT - SA*	ER – priv ; FRw - pub.	ER – priv ; FRw - pub.	ER - priv; FRw - pub.	ER - priv; FRw - pub.	V - priv; M - pub.		-	V
FR	MT	ER	ER	ER - HC	ER	V		-	V*
IE	MT - FR & SA	FR	MT – FR & SA	SA: MT – FR; Contributory: FR	SA: MT – FR; Contributory: FR	M - pub; V* - priv		X	V*
IT	MT & SA	ER	ER	ER	ER	V*		X	V*
CY	SA*	ER	ER	ER	ER	M - pub; V* - priv		X	X
LV	SA	ER	ER	ER	ER	X		M - young (1971); V - old	V*
LT	SA	ER	ER	ER	FR or ER	X		V	V*
LU	FR - SA*	ER	ER	ER	ER	V*		X	V*
HU	MT - SA	ER	ER	ER	ER	X		M - new (1998)	V*
MT	MT - FR*	ER	-	FR	ER	Exists only to a minor extent*		X	V*
NL	SA*	FR	-	ER	FR	M		X	V*
AT	MT - SA*	ER	ER	ER	ER	M*		X	V*
PL	MT*	ER	ER	ER	ER	V*		M/V	V*
PT	MT - SA	ER	ER	ER	ER	M - prof; V - others		X	V*
RO	SA	ER	ER	ER	ER	-		M	-
SI	MT*	ER	ER	ER	ER	M * - prof; V* - others		X	V
SK	MT - SA	ER	ER	ER	ER	X		M/V	V*
FI	MT	ER	ER	ER	ER	V*		X	V*
SE	MT	ER	ER	ER	ER	V		M	V
UK	FR & MT - SA	ER	X	ER HC*	-	V*		X	V*
NO	FR	ER	X*	ER	ER	M*		X*	V*

Source: Commission services, EPC

Note: Cells highlighted in grey indicate the schemes not covered by the projection.
Table refers to the systems covered by the Ageing Report 2009. It should be noted that in the meantime some countries suggested major changes to their systems, e.g. Ireland.
LV: Minimum pensions/social allowance should be: SA&FR, mandatory private scheme: M/V.

Key:

MT	…	Means tested
FR	…	Flat rate
FRw	…	Flat rate by wage categories
ER	…	Earnings related
HC	…	Partly covered by health care expenditure
SA	…	Social allowance/assistance
X	…	Does not exist
V	…	Voluntary participation in the scheme
M	…	Mandatory participation in the scheme
*	…	Is not covered by the projection
public	…	Public sector employees
private	…	Private sector employees
new	…	New labour market entrants
prof	…	Only for selected professions
other	…	Other than selected professions
young(X)	…	Only for people born in year X and after
old	…	Only for people other than young

Annex 2: Indexation rules and sustainability factors

A key determinant of pension expenditure dynamics is the indexation rule, but also automatic adjustment mechanisms introduced in some pension systems have impact on future expenditure.

Table 2 - Legal indexation rules in EU Member States

| | LEGAL INDEXATION | | | | | Occupational pension scheme | Private pension scheme | |
| | Public pensions | | | | | | | |
	Minimum pension / social allowance	Old-age pensions	Early retirement pensions	Disability pensions	Survivors' pensions		Mandatory private scheme	Voluntary Pension scheme
BE	CPI + LSA	CPI + LSA	CPI + LSA	CPI + LSA	CPI + LSA	-	-	-
BG	50%CPI + 50% NI	50%CPI + 50% NI	50%CPI + 50% NI (before end 2010 pensions). NR (after 2010 pensions)	50%CPI + 50% NI	50%CPI + 50% NI	NR	NR	NR
CZ	NR	CPI + min 1/3 RI	CPI + min 1/3 RI	CPI + min 1/3 RI	CPI + min 1/3 RI	-	-	-
DK	NI	NI	NI	NI	NI	-	-	-
DE	In line with pensions & re exam(5)	NI + sust	NI + sust	NI + sust	NI + sust	-	-	-
EE	80% CPI + 20% NI	80% CPI + 20% NI	80% CPI + 20% NI	80% CPI + 20% NI	80% CPI + 20% NI	-	-	-
EL	NR	NR	NR	NR	NR	-	-	-
ES	CPI	CPI	CPI	CPI	CPI	-	-	-
FR	CPI	CPI	CPI	CPI	CPI	-	-	-
IE	NR	NR	NR	NR	NR	NR - pub	-	-
IT	CPI or fixed in nominal terms	CPI - size	CPI - size	CPI - size	CPI - size	-	-	-
CY	NI	Basic: NI; Suppl.: CPI	Basic: NI; Suppl.: CPI	Basic: NI; Suppl.: CPI	Basic: NI; Suppl.: CPI	NI - pub	-	-
LV	CPI + 50% RI	CPI + 50% RI	CPI + 50% RI	CPI + 50% RI	CPI + 50% RI	-	-	-
LT	NR	NR	NR	NR	NR	-	-	NR
LU	CPI if CPI>2.5% & RI re-exam(2)	CPI if CPI>2.5% & RI re-exam(2)	CPI if CPI>2.5% & RI re-exam(2)	CPI if CPI>2.5% & RI re-exam(2)	CPI if CPI>2.5% & RI re-exam(2)	-	-	-
HU	-	50% CPI + 50% NI	50% CPI + 50% NI	50% CPI + 50% NI	50% CPI + 50% NI	-	At least 50% CPI + 50% NI	-
MT	2/3 COLA	COLA + NI (born before 1962); 70% NI + 30% CPI (born after 1962)	-	COLA	COLA + NI (born before 1962); 70% NI + 30% CPI (born after 1962)	-	-	-
NL	NI	NI	-	NI	NI	70% NI & 30% CPI	-	-
AT	CPI	CPI	CPI	CPI	CPI	-	-	-
PL	CPI + 20% RI	CPI + 20% RI	CPI + 20% RI	CPI + 20% RI	CPI + 20% RI	-	NR	NR
PT	CPI + GDP partially (GDP)	CPI + GDP partially (size and GDP)	CPI + GDP partially (size and GDP)	CPI + GDP partially (size and GDP)	CPI + GDP partially (size and GDP)	CPI for DB 1st pillar and re-exam(1) for the other plans	-	-
RO	RI	RI	RI	RI	RI	-	NR	-
SI	In line with pensions	NI and sust	NI and sust	NI and sust	NI and sust	NR	NR	NR
SK	NR	50% CPI + 50% NI	50% CPI + 50% NI	50% CPI + 50% NI	50% CPI + 50% NI	-	NR	-
FI	CPI	80% CPI + 20%NI + sust	80% CPI + 20%NI + sust	80% CPI + 20%NI + sust	80% CPI + 20%NI + sust	-	-	-
SE	CPI	NI + sust	NI + sust	NI + sust	NI + CPI	-	-	-
UK	NI	CPI; NI as of 2012	-	-	CPI	-	-	-
NO	NI	NI	-	NI	NI	-	-	-

Source: 2009 Ageing Report

Key:

NR	…	No rule exists
RI	…	Real income growth
NI	…	Nominal income growth
GDP	…	GDP growth
CPI	…	CPI inflation
LE	…	Adjustment to life expectancy.
LSA	…	Living standard adjustment
COLA	…	Adjustmentd to cost of living
size	…	Adjusted by a pension size
sust	…	Additional adjustment due to other mechanisms such as a sustainability factor, balancing mechanism, life expectancy, value of a pension point, maintenance of relativity between means-tested and contributory pension, etc.
re-exam(X)	…	Reexamination of pension value every X years
min	…	At least

Note: Some changes have been introduced since the release of the 2009 Ageing Report as follows.
Hungary: Public pensions are indexed to CPI and, depending on GDP growth, also NI component If the real GDP growth is 3%, 100% CPI shall be applied; in case of higher GDP, the proportion of NI component gradually increases, but no more than 50% (if real GDP growth exceeds the 5%).
Romania: Public pensions are indexed to nominal income growth (100% NI).
Latvia: minimum pension/social allowance: CPI + 50% RI, but FR − NR; other public pensions: CPI + 50% RI
UK: The final column ('voluntary pension scheme') entry for the UK should read 'the lesser of RPI and 2.5%'. Voluntary private sector DB schemes are required to index the pensions of early leavers and pensioners by RPI up to a maximum of 2.5% per annum. In the event of deflation there is no negative indexation and the nominal value of benefits is maintained.

Annex 3: Greater role for pre-funding of pensions[1]

Greater pre-funding, in one form or another, has been a popular policy response by Member States to the demographic challenge. The main reasons behind introduction of pre-funding have been to reduce the burden of pension expenditure for future working population and to give people the idea about the cost of pension promises at an early stage of work careers. However, it is important to note that pay-as-you-go (PAYG) is and will remain the most important element in overall pension provision for most European citizens.

As illustrated in Figure 1, privately managed funded schemes are not entirely mature in the majority of Member States where they exist. Usually a higher share of active population is covered than in the population aged 65 and more. Some pre-funding has traditionally been an important element of the overall pension system only in certain EU countries (notably in IE, NL, SE, UK and DK plus FI with its long established reserve fund).

Figure 1 - Privately managed funded pensions coverage in selected EU Member States, 2008
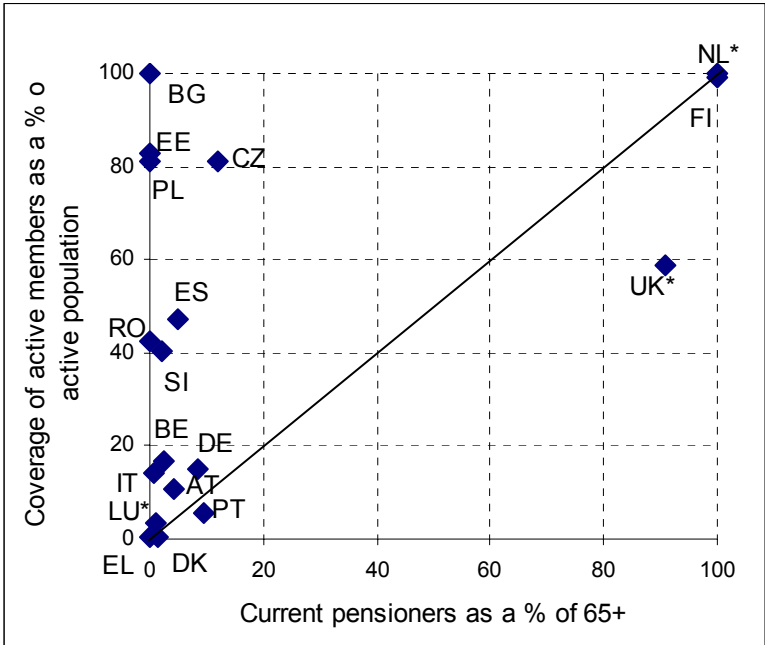
Source: OECD GPS database
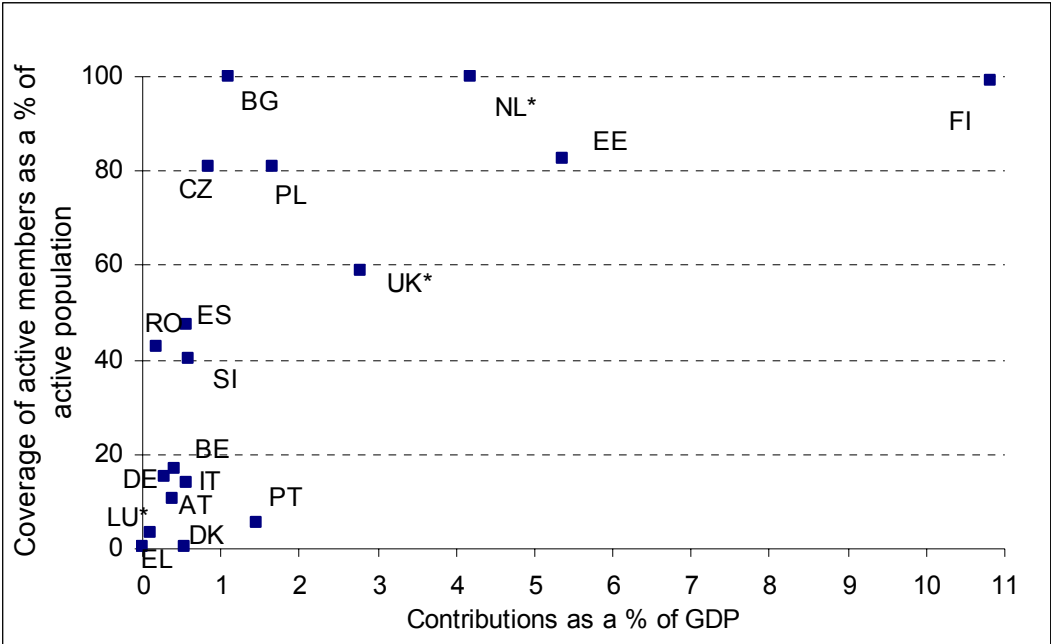Note: *-2007, Maximum coverage is set at 100% for countries where more than total active population is covered
Private pension plan according to the OECD: a pension plan administered by an institution other than general government. Private pension plans may be administered directly by a private sector employer acting as the plan sponsor, a private pension fund or a private sector provider. Private pension plans may complement or substitute for public pension plans. In some countries, these may include plans for public sector workers.

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[1]

In case of **Belgium** data only include autonomous pension funds.
In case of **Denmark** the split between active and passive members is provided only for company pension funds. Company pension plans held in insurance companies or in banks (which represent the biggest part of occupational pension plans) and the ATP plan are not covered.
Data from **Ireland** come from the IAPF asset allocation survey (Irish Association of Pension Funds). This survey is based an a sample of financial institutions involved in pension fund asset management and is complemented by the largest Irish pension funds.
In the case of **Germany**, data only cover *Pensionskassen* and *Pensionsfonds* (German IORPs that fall under the supervision of BaFin).
Data for **Finland** cover the mandatory pension plans. Even if they are part of the social security system, they are included in the OECD statistics as these plans are partially funded.

In case of **Belgium**, if members of both pension funds and group life insurance schemes are included, the ratio of active members as a % of active population stands at 56.5% in 2008, while the ratio of current pensioners as a % of 65+ at 4.5%.

Figure 2 demonstrates that contributions to privately managed funded pensions as a share of GDP are usually higher in countries with high coverage of active population and in countries with mature schemes. Countries with traditionally important and mature privately managed funded pensions also have higher assets as a proportion of their GDP. Nevertheless, as the schemes will mature, the share of their assets in GDP will increase and long-term projections reveal that funded pensions will play greater role in future pensioners' income than they do today in a number of Member States.

Figure 2 - Privately managed funded pension coverage and contributions in the EU, 2008


Source: OECD GPS database
Note: *-2007, Maximum coverage is set at 100% for countries where more than total active population is covered
For **Belgium** contributions as a % of GDP represented 1.7% in 2008 if both pension funds and group life insurance schemes are included.

Annex 4: Labour market developments 2000-2008

During the last decade, labour markets of the EU-27 have seen a positive development overall, in particular between 2004 and 2008. Since the beginning of the Lisbon Strategy, considerable progress had been made in EU labour markets before the crisis in financial markets deepened sharply in autumn 2008 - the overall employment rate had risen by close to 4 percentage points (pps), reaching 65.9% in 2008 (vs 62.1% in 2000), reflecting a rise in the total number of people in employment[2] of around 19 million. The employment rates for women and older workers in particular showed considerable progress, reaching 59.1% and 45.6% respectively in 2008.

Compared to 2000, by 2008 the overall employment rate in the EU-27 has risen 3.8 percentage points, the female employment rate 5.5 pps, and that for older workers 8.8 pps. As a result, the gaps relative to the Lisbon targets were respectively 4.1, 0.9 and 4.4 pps in 2008. However, one should bear in mind that the targets were originally set when the EU comprised just 15 Member States. With regard to that configuration progress towards the targets has been more substantial. The gaps in 2008 were a more limited 2.7, -0.4[3] and 2.6 pps respectively. As a result, the mechanical impact of the two recent enlargements has been to reduce average EU employment rates by around 1.4-1.8 percentage points, depending on the specific target.

Figure 3 – Overall, female and older workers employment rates in EU-27, 2000-2008, in %
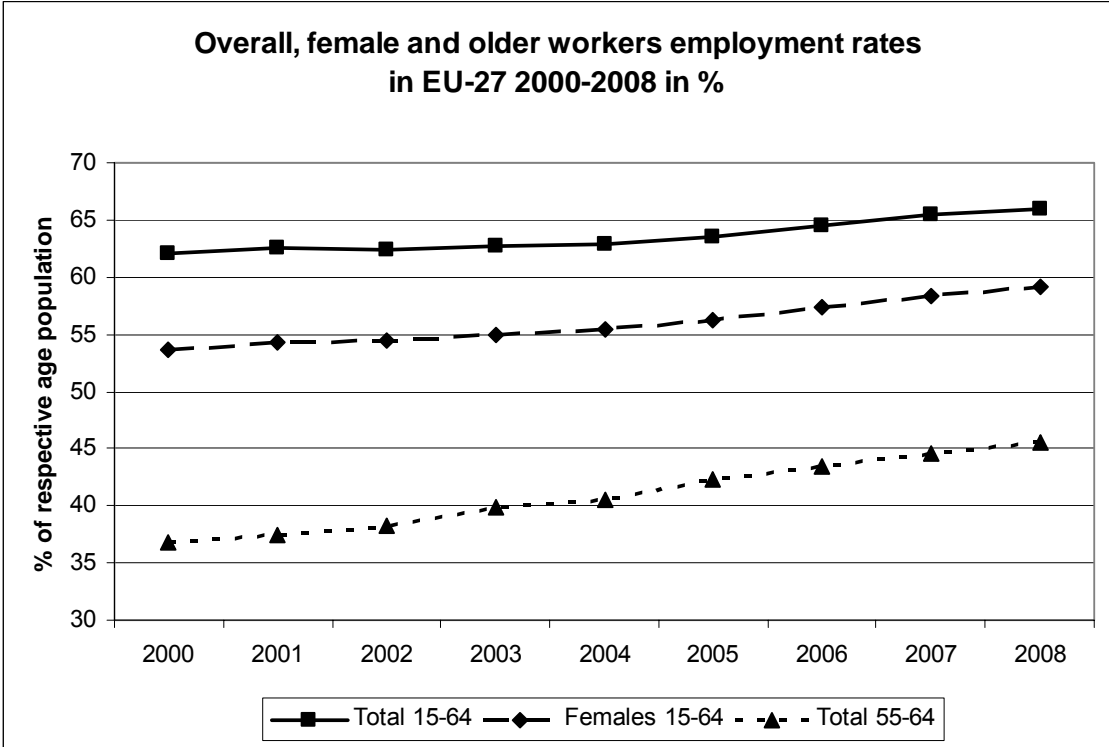
Source: Eurostat, LFS annual data.

The greatest progress in employment has been achieved among women and older workers. Between 2000 and 2008, 39 % of the net creation of employment was contributed by women aged 25-54 and a further 38 % by 55-64 year olds (European Commission 2009a, Table 3).

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[2] National concept based on Eurostat LFS data.
[3] A negative gap meaning that the target had been exceeded.

Table 3 - Developments in overall, female and older worker's employment rates EU-27 2000-2008

	EU-27			EU-25			EU-15		
	2000	2008	Change	2000	2008	Change	2000	2008	Change
Overall ER (%)	62.1	65.9	3.8	62.2	66.3	4.1	63.2	67.3	4.1
Female ER (%)	53.6	59.1	5.5	53.5	59.4	5.9	53.9	60.4	6.5
Older worker's ER (%)	36.8	45.6	8.8	36.4	45.7	9.3	37.5	47.4	9.9

Source: Eurostat, LFS annual data

**Figure 4 - Employment rates in the EU-27, 2000-2009, 2nd quarters, in %**
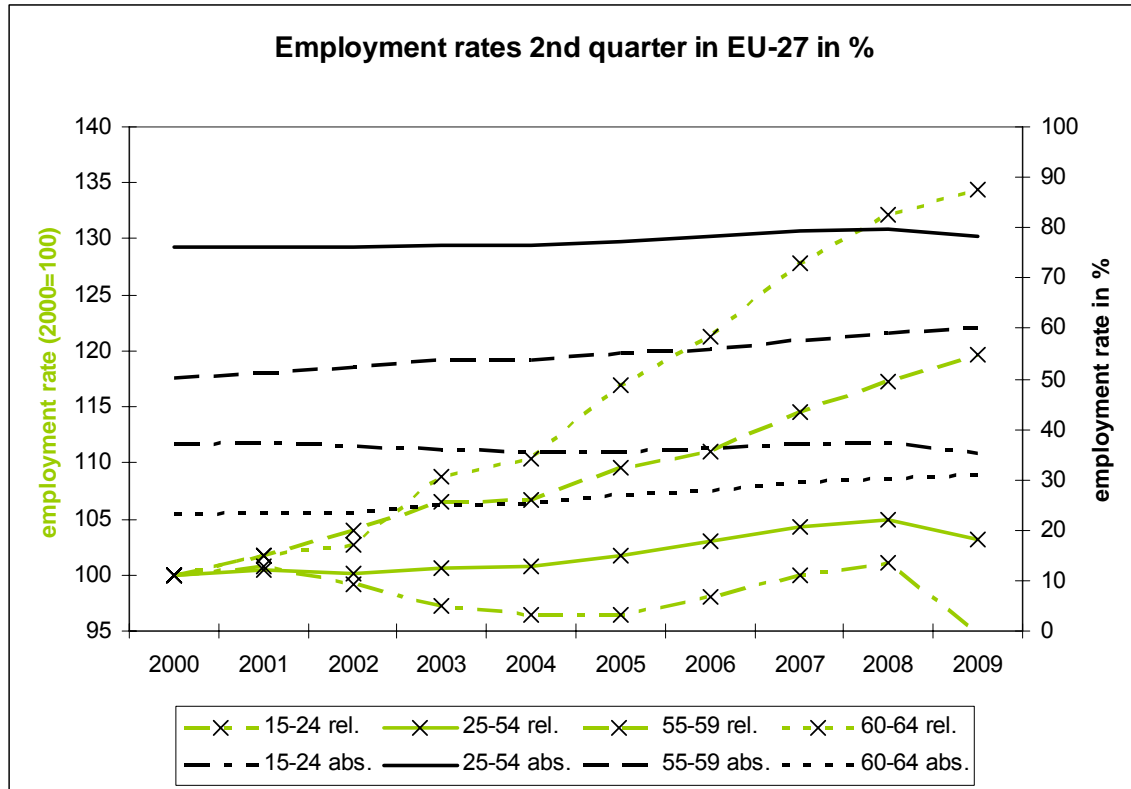
Source: Eurostat, LFS quarterly data on 2nd quarter

The overall impact of the crisis on labour markets still remains to be seen. While some Member States have seen much worse outcomes than others, developments since mid-2008 are marked by **falling demand for new workers** (around -30%), **employment contraction** (-1.9% = 4.3 million jobs), and **rising unemployment** especially among groups already in a relatively weaker labour market situation before the crisis (young people, low-skilled, migrants). **Older workers** have not been at particular risk of losing their job due to the crisis so far, but they face substantial difficulties in becoming re-employed.[4] While employment rates fell between the second quarters of 2008 and 2009 for younger people and especially for men, the rates further increased for older workers.

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[4] Draft Joint Employment Report 2009/2010

Figure 5 – Level and change in employment rate of 55-64 year old workers in Member States, 2000-2009
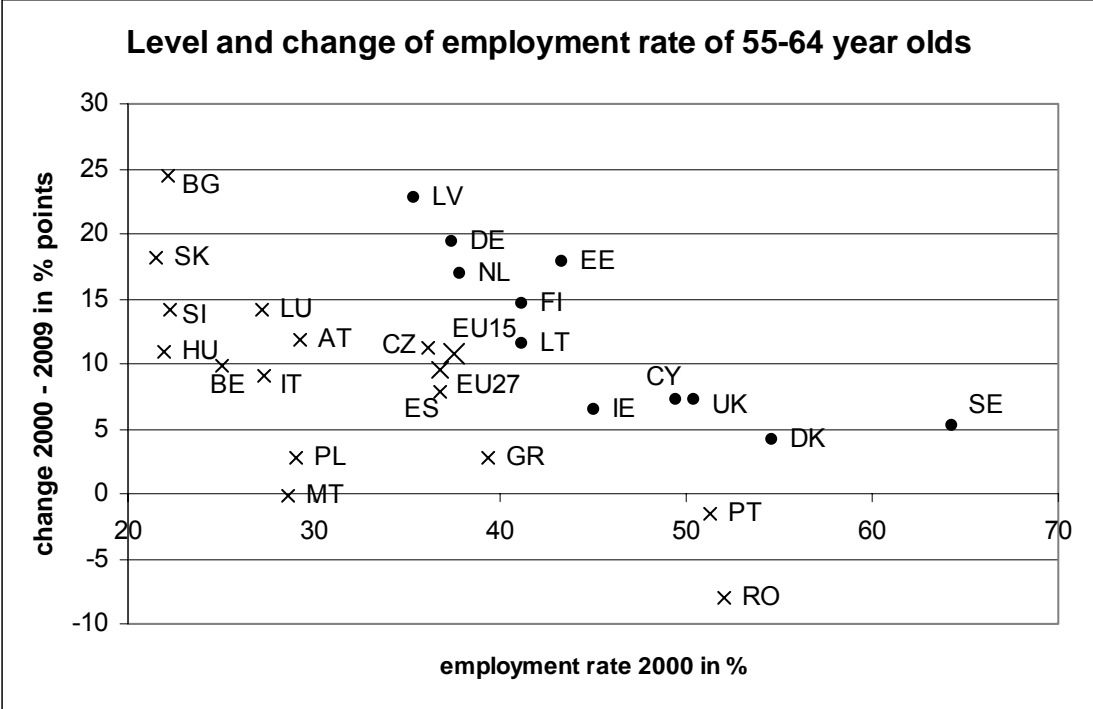
Source: Eurostat, LFS quarterly data on 2nd quarter

Figure 5[5] compares the level of the employment rate in 2000 with the subsequent change of the employment rate between 2000 and 2009 in percentage points. Between 2000 and 2009 on average the increase was higher in countries that had a low employment rate, thus leading to a slight convergence of rates in this period. In the second quarter of 2009, already 11 countries reached the goal of an employment rate of 50 % (SE, EE, DK, LV, UK, DE, CY, FI, NL, LT, IE, marked by a ●).

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[5] France is not included because of missing data for the year 2000. In the 2nd quarter of 2009, the employment rate for 55-64 year-olds in France was 39.4%.

Annex 5: Future adequacy of pensions measured by Theoretical Replacement Rates

I. Introduction

Theoretical Replacement Rates are defined as the level of pension income the first year after retirement as a percentage of individual earnings at the moment of take-up of pensions. Theoretical replacement rates are calculated for an assumed hypothetical worker, who in the so-called "base case" has a given earnings and career profile (male, earnings of average wage constant over his fulltime 40 years career, retiring at 65, etc) and a corresponding affiliation to pension schemes (i.e. the most general schemes for private sector employees). In the so-called "variant cases" the key assumptions of the base case are changed, once at a time, (for example, variant earnings profiles or length of contributory period) in order to illustrate how the replacement rates vary for different departures from the main assumptions, and thereby to study the effects of the reforms that entail changes on the related key parameters. Replacement rates also rely on specific assumptions on the key economic and demographic parameters that are relevant for the calculation of future earnings and benefit entitlements. As opposed to other adequacy measures, such as the *gross average replacement rate*, theoretical replacement rate calculations assume a constant steady state of the macroeconomic assumptions, thus isolating the effects of the pension legislations on an individual's pension.

The theoretical replacement rate calculations take into consideration social security contributions to statutory and supplementary pension schemes or funds. Taxes and means-tested social benefits are included in the calculations. The *gross replacement rate* is defined according to the pre-taxed income (after employer contributions, but including employee contributions). The *net replacement rate* is calculated as net of income taxes and employee contributions[6].

Current replacement rates for 2006 describe the situation of people who retire today, while *prospective* replacement rates for 2046 describe the pension income of people retiring in the future thus also reflecting the effects of eventual pension reforms[7]. Results for 2006 present the pension outcome under current legislation (enacted by 2006), including transitional rules to be implemented gradually that may be legislated in enacted reforms. This includes the currently legislated indexation rules for different benefits. The calculations do not reflect reforms that can have been decided since 2006. The calculations for 2046 typically reflect reformed pension systems in full maturity. In this way the calculations allow for an assessment of recent pension reforms on adequacy of pensions, taking into account changes that have been decided in many countries as a result of recent reforms[8].

Annex 16 presents summary charts on the *levels* of net and gross theoretical replacement rates of the EU Member States according to the current and prospective calculations for 2006 and

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[6] For more detailed information see the report "Updates of current and prospective theoretical pension replacement rates 2006-2046",
http://ec.europa.eu/social/main.jsp?langId=en&catId=752&newsId=551&furtherNews=yes

[7] While the data and information here still refers to 2006 and 2046 (the current most recent update of theoretical replacement rates), the attempt will be to provide these figures and analysis for 2008 and 2048, once the ongoing exercise of updating and validating these figures is finalised.

[8] It should be noted however, that the point at which we measure current theoretical replacement rates (currently, 2006) already contains many reforms, therefore the exercise of comparing theoretical replacement rates 2046 – 2006 cannot be understood as reflecting a straightforward assessment of the situation post – pre reforms that have taken place over the last decade. Since pension reforms occur more or less constantly, this would actually happen for any point of time at which we could try to measure theoretical replacement rates.

2046 and a break-down into individual components of statutory and complementary provisions. However, comparability of replacement rate levels across countries is not clear-cut. In order not to misinterpret the results it is vital to consider theoretical replacement rates with information on representativeness and the assumptions, as they are calculated for a hypothetical worker. The choice of specific common assumptions about the hypothetical worker used for the calculation, such as the age of retirement and the length of the contributory period before retirement, inevitably imply that only a share of individuals are actually represented by this career scenario.

The base case, for example, is chosen in order to reflect as closely as possible current actual situations and institutional frameworks. However, given the diversity of situations across Member States, the base case may not necessarily be representative of workers in all Member States and therefore, theoretical replacement rates need to be analysed in the light of background information aimed at showing in particular how "representative" the hypothetical worker is in a specific Member State. For example, in the calculations a forty year career is typically calculated with a person entering the labour market at the age of 25 and retiring at 65. The fallback with these calculations is that the replacement rates for countries with a higher or lower legislated retirement age than that which is assumed can mean that the work incentives in the system may be over or under estimated depending on how they are legislated.

Consequently, comparability between Member States of current and projected replacement rates depends on the degree to which the commonly defined individual case is representative in different Member States. This varies considerably across Member States, impairing the direct comparability of the results based on actual replacement rate levels.

Therefore, the analysis of theoretical replacement rates in this section focus on differences in theoretical replacement rates over time or between different profiles, to assess different reforms, rather than on levels' comparison across countries. Also the interpretation of the TRR over time has to consider that it is a theoretical case, not matched by the reality of increasing average careers.

II. Changes in Theoretical Replacement Rates

First, updates of the calculations for an agreed upon average earner profile, the so-called base case are presented and analysed for the period 2006-2046. Later on, the other career and income profiles (variant cases) with a comparison to the base case are analysed.

II. 1. Base case scenario

Given the assumptions described in the previous section for the calculations of theoretical replacement rates in the basecase, 11 Member States display results where reforms of statutory schemes would lead to a decrease of replacement rates between 2006 and 2046, for a worker with average earnings retiring at 65 after 40 years (see Figure 1 below, displaying the change in replacement rates from the current situation to the prospective situation). This is most probably a reflection of reforms that have lowered future benefit levels at a fixed retirement age in order to cope with increasing longevity and the expenditure it would otherwise entail. As a result many Member States have also proceeded to increase incentives to work longer.

Some of the factors that may influence the downward evolution of replacement rates for some Member States observed in Figure 1 are summarised below:

Most Member States have statutory pension schemes providing earnings-related pensions. Benefits under these pension schemes are related to earnings either during a specified number

of years during the career, or as is increasingly common practice, during the entire length of the career. Several countries have extended — or are still in the process of extending — the period of an individual's earnings history that is used for calculating the pension entitlement in the statutory pension schemes (e.g. AT, BG, CZ, ES, FR, HU, PT, FI, IT, RO). Thus, instead of using the years of highest earnings towards the end of the career for the pension benefit calculation, earnings during a much longer period or even the entire career (e.g. DE, PL, SE, RO) are taken into consideration. *This change will usually lead to lower replacement rates*, particularly if accrued entitlements are not fully adjusted for (nominal) wage growth.

Pension levels can also be lowered through adjustments in the pension formula used to calculate benefits. One significant development has been the introduction of a demographic adjustment factor. For countries which have introduced life expectancy adjustment factors in their statutory pension systems (e.g. DE, AT, FI, FR, IT, PL, PT, SE), this can translate into a *decrease of theoretical replacement rates*. Thereby, in order to keep income replacement rate constant, they provide incentives for people to postpone their retirement in accordance with rising life expectancy and offer opportunities for achieving adequate pension levels (see below).

Increasing the retirement age can also result in falling replacement rates where a retirement age of 65 is assumed in the calculations. For instance, in DE the rise of the legal retirement age from 65 in 2006 to 67 in 2046 gives deductions of 3.6% per year of early retirement before the age of 67, and explains some of the fall in theoretical replacement rates from the statutory pension scheme, when the retirement age is assumed at 65.

For other group of Member States there seem to be no significant changes in their replacement rates between 2006 and 2046. And a last group of Member States may actually observe their replacement rates rise as a result of recent reforms that would be fully in place by 2046.

Figure 6 - Change in the TRR between 2006 and 2046, the "base-case" scenario[9]
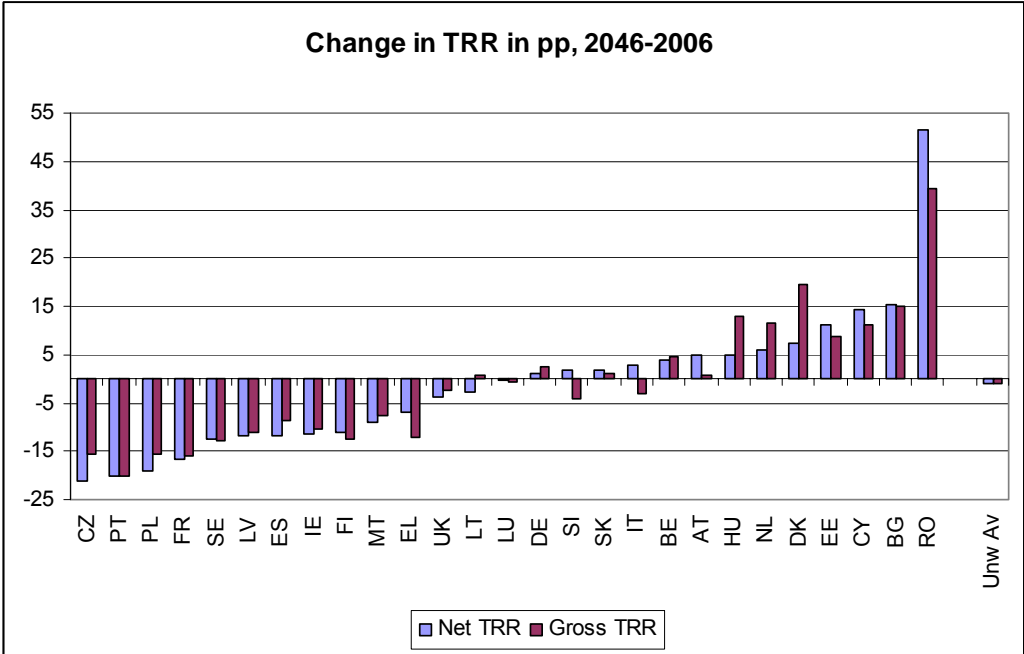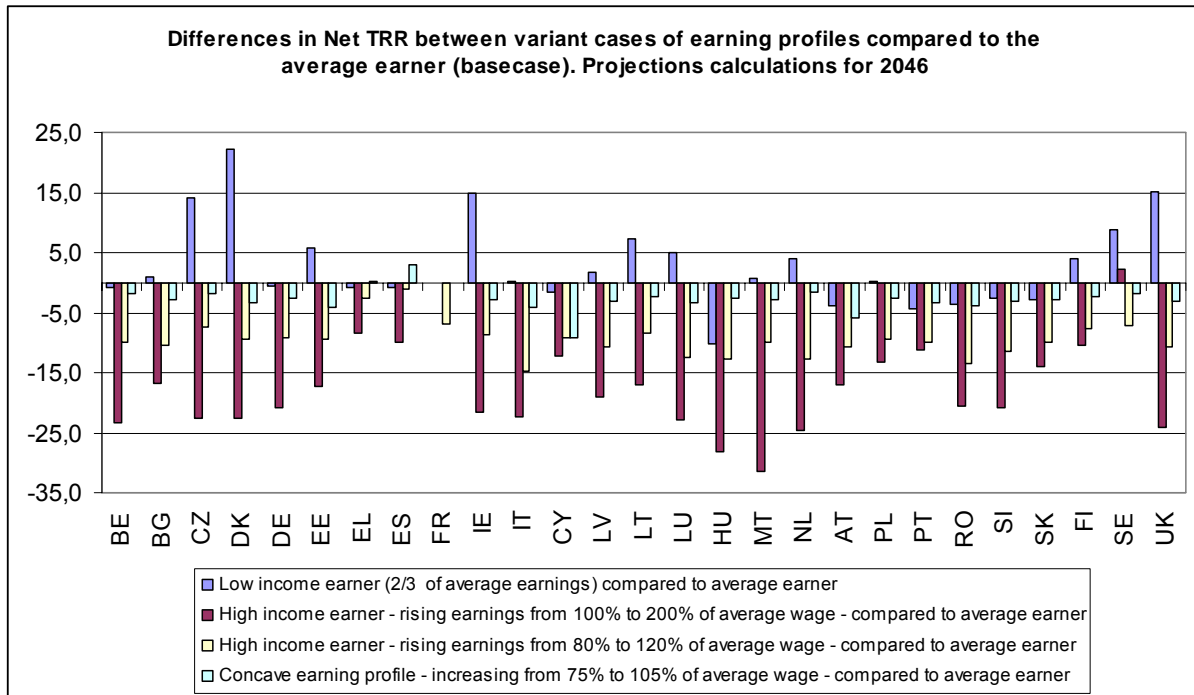

Source: TRR report

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[9] In case of HU, the changes in gross replacement rate are partially caused by a methodological change. As from 2013, benefits will be calculated on the basis of gross earnings and will become taxable, thus the gross replacement rate also includes the effect of a foreseen change in taxation rules.

II.2. Variant cases of different earning profiles

Figure 7 shows changes in prospective (2046) net theoretical replacement rates for:

a) Low income earner (2/3 average wage), compared with average earner.

b) High wage earner (linear increasing earnings profile beginning at 100% of the average, ending at 200% of the average) compared with average earner.

c) High wage earner (linear increasing earnings profile beginning at 80% of the average, ending at 120% of the average) compared with average earner.

d) Concave earning profile (increasing from 75% to 105% of average wage) compared with average earner.

Figure 7 - Differences in net TRR between variant cases of earning profiles compared to the average earner ("base-case") in 2046

Source: TRR report

Figure 8 shows changes in net TRR between 2006 and 2046 for:

a) Average earner retiring at age 65 after 40 years career.

b) Low income earner (2/3 average wage) retiring at age 65 after 40 years career.

b) High wage earner (linear increasing earnings profile beginning at 100% of the average, ending at 200% of the average) retiring at age 65 after 40 years career.

For workers with low earnings, mandatory schemes may tend to have a more significant role in the replacement income. Gross replacement rates are significantly higher (4 pp. or higher) for low income workers than average earners in some Member States (CZ, DK, EE, IE, LT, LU, NL, SE, UK) (Figure 2).

For the remaining Member States the difference is small with only a few Member States with lower gross replacement rates for low earners. This reflects the fact that most countries attempt to protect low income workers from old-age poverty especially in the statutory pension schemes.

When studying net replacement rates, however, some Member States display a lower result for low income earner compared with average income earners (CY, HU, AT, PT, RO, SI and SK). This is because the effect of taxes and social security contributions on net replacement rates for low earners can be higher than for workers higher up the earnings scale. Low-income workers typically pay less in taxes and contributions than those on average earnings. However, in many cases, retirement incomes for those with lower earnings are at a level that does not allow them to benefit from income-tax reliefs (allowances, credits, etc). This means that in some cases low income earners may pay a larger portion of their gross pension in taxes as compared with an average earner.

Regarding the evolution replacement rates between 2006 and 2046 (Figure 3), the decline of the theoretical replacement rate between 2006 and 2046 is in many cases of a comparable magnitude (as expressed in percentage points) for a low wage earner and the average one. As replacement rates are generally higher for that type of career, this indicates that the decline in relative disposable income is projected to be lower for more modest workers.

Figure 8 - Differences in net TRR between 2006 and 2046 for different earning profiles

Differences in Net TRR between 2006 and 2046 for different earning profiles

☐ Change in Net TRR between 2005 and 2046 for a worker with average earnings

■ Change in Net TRR between 2005 and 2046 for a low income earner (2/3 os average earnings)

☐ Change in Net TRR between 2005 and 2046 for a high income earner (rising earnings from 100% to 200% of average wage)
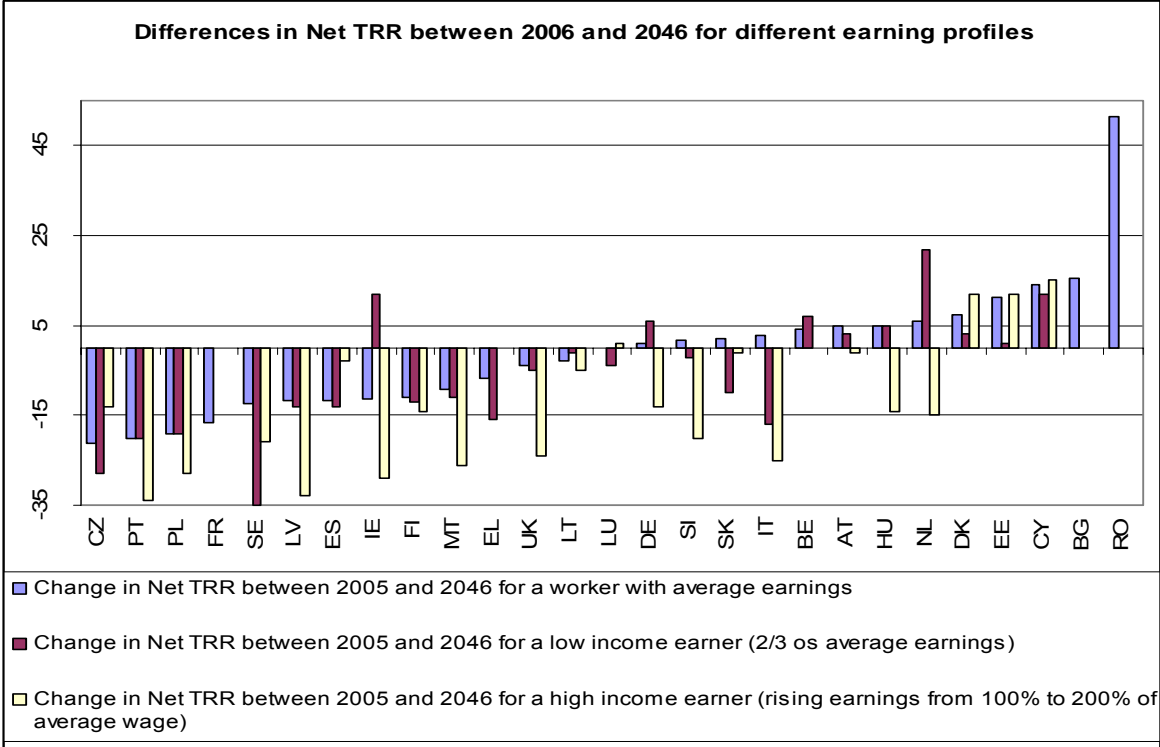
Source: TRR report

However, for some Member States, the evolution of theoretical replacement rates appears to be very significantly less favourable for lower wages than for average wages (EE, SK, IT, EL and SE), which may reflect in some cases short transition periods associated to the introduction of a funded tier in the statutory scheme. More generally, it can be noted that a reinforcement of the link between contributions and benefits can result into a flatter profile of the evolution of replacement rates according to initial levels, which could translate into significant declines of replacement rates for more modest pensioners.

On the other extreme, studying the case of a higher than average wage earner is important in order to study the role of private pension provision which is often more pertinent in the income replacement for those with higher earnings. It also shows the restrictions of earnings ceilings that often exist in statutory pension schemes on replacement rates, implying that the

formula of pension benefits can be both progressive (lower replacement rates for higher incomes) and have redistributive elements.

In almost all Member States those with a higher earnings profile display significantly lower replacement rates compared with average earners in all Member States (Figure 2). This less favourable situation for high wage earners in Member States reflects the progressive nature of the formula of pension benefits. Furthermore, in many pension schemes the length of earnings history used in the benefit calculation is being extended, where earnings from more years are used to calculate the pension. This is often a relatively unfavourable development for those with increasing wage profiles and high departing salaries.

As compared to the base case, the evolution over time of theoretical replacement rates is in most cases lower (as expressed in percentage points) for a worker with an ascending wage profile (from 100% to 200% of the average wage) than for a flat wage profile at the level of the average wage (Figure 3). While in most Member States the evolution is not very different than in the base case (difference of about one or two percentage point), in some Members States, the evolution is less favourable of between 5 and 10 percentage points (in net terms, in DE, HU, IT, IE, LV, MT, NL, PL, PT, SI, UK).

II.3. Variant case of worker ten years after retirement

The basic definition of theoretical replacement rates reflects the income replacement at the time of retirement. But adequacy is not just about replacement levels at the time of retirement and pension take-up but also about how the value of benefits relative to prices and wages is maintained over time, especially considering that the retirement period is currently likely to last for more than 15 years for men as longevity increases.

Figure 9 – Difference in net and gross TRRs for a pensioner ten years after retirement compared to net and gross TRRs of the year of retirement ("base-case"), calculations for 2046
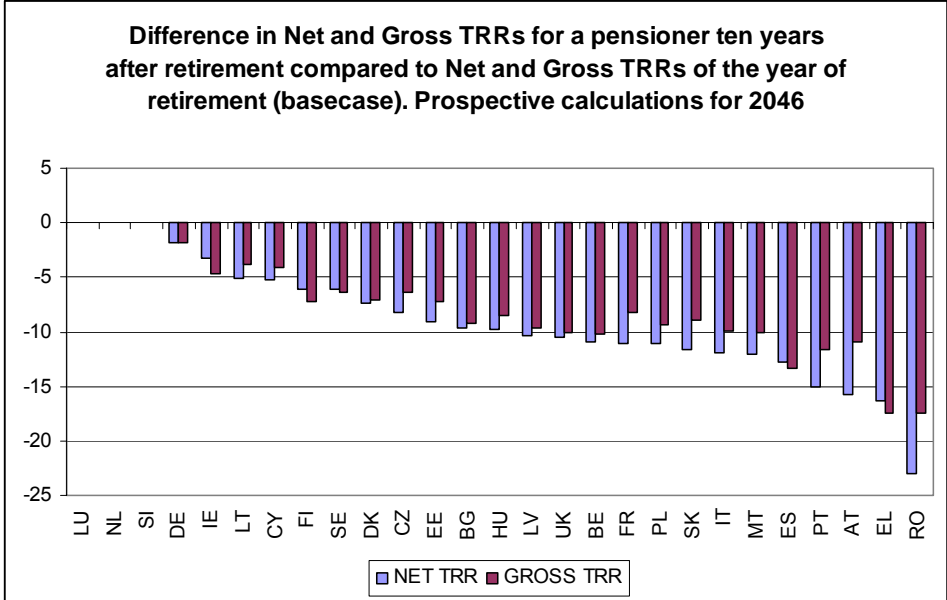
Source: TRR report

Indexation allows pensions to keep a certain value over time, ensuring maintained of standards of living for a group that typically cannot affect their income level in the years following retirement. Historically, pensions have tended to be indexed to inflation, which is typically lower than the development of nominal average earnings, as is assumed in our exercise. While protecting retirees from inflation, less than indexation to earnings means that the living standards of a pensioner will drop over time relative to the rest of the population

and pensions in payment most often lag behind the evolution of wages. This can translate into significant declines of the level of theoretical replacement rates during the period of retirement.

Figure 9 shows, for a pensioner retiring in 2046, the difference between prospective net and gross theoretical replacement rates ten years after retirement (ie 2056) compared to those ratios at the year of retirement (2046).

According to the calculations, in all but a few Member States (e.g. LU, NL, SI) replacement rates fall significantly in all schemes ten years into retirement. This clearly reflects the wide use of less than earnings indexation in Member States, even in DC schemes once they have been converted into an annuity.

II.4. Variant cases of different retirement ages

II.4.1. A female base case worker

According to current legislation the retirement age in 2046 for women will be different to that for men in some Member States. This would mean that the possible standard-career is often shorter for women due to a lower legislated retirement age (BG, IT, LT, PL, RO)[10]. The calculation for the variant case for a female base case worker looks at the differences in prospective replacement rates between men and women based on the lower retirement age and a consequently shorter contributory period for women in comparison to men in these countries. In these calculations retirement is assumed at the legislated retirement age for both men and women and not the assumed retirement age of 65 used in the base case calculations. The implication of this is that the length of career differs between men and women according to the statutory retirement age. Probable differences in average earnings that may exist between men and women are not considered here.

Figure 10 - Differences in net and gross TRR for women compared with men average earners retiring at the legislated retirement age (where different) in 2046
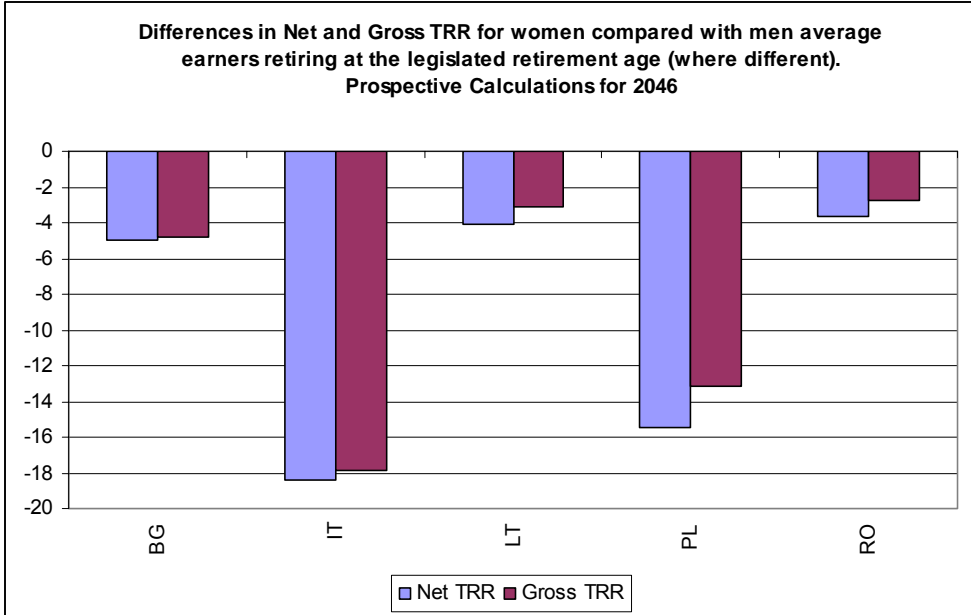
Source: TRR report

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[10] The pension eligibility age is also different for men and women in SI, but the contributory requirements are adjusted in a manner that women receive the same gross replacement rate as men despite retiring two years earlier at age 61. The calculations have, therefore, not been carried out for SI.

The gross and net replacement rate results are lower for women than for men in all Member States. The most notable gender differential in gross replacement rate is observed for IT (around 18 pp.) and PL (around 15 pp.) which both have NDC systems with actuarial reductions of the pension the earlier it is retrieved. The lower replacement rates are a result of women retiring earlier than men. In IT, for example, the calculations for women present retirement at age 60 with 35 years of work seniority as compared with retirement at 65 with 40 years seniority for men. It is however important to note that in IT women may continue to work age of 65 or beyond. The difference in the results between men and women in BG and LT are lower reflecting better protection for shorter careers for women.

II.4.2. Longer and shorter careers

In the ISG calculations a forty year career is typically calculated with a person entering the labour market at the age of 25 and retiring at 65. Results have shown a decline in future pension levels and the subsequent theoretical replacement at a given pension age. This reflects that reforms of statutory pensions aim at meeting the challenge caused by increases in life expectancy by lowering pension levels if individuals in the future still retire at the same age as today. To compensate for this decline most countries have incorporated incentives to prolong working life into their pension systems.

Figure 11 – Difference in net TRR percentage points for an average earner working until the age of 63 or 67 (ie 38 or 42 contributory years) compared with working until 65 (ie 40 years "base-case" career) in 2046
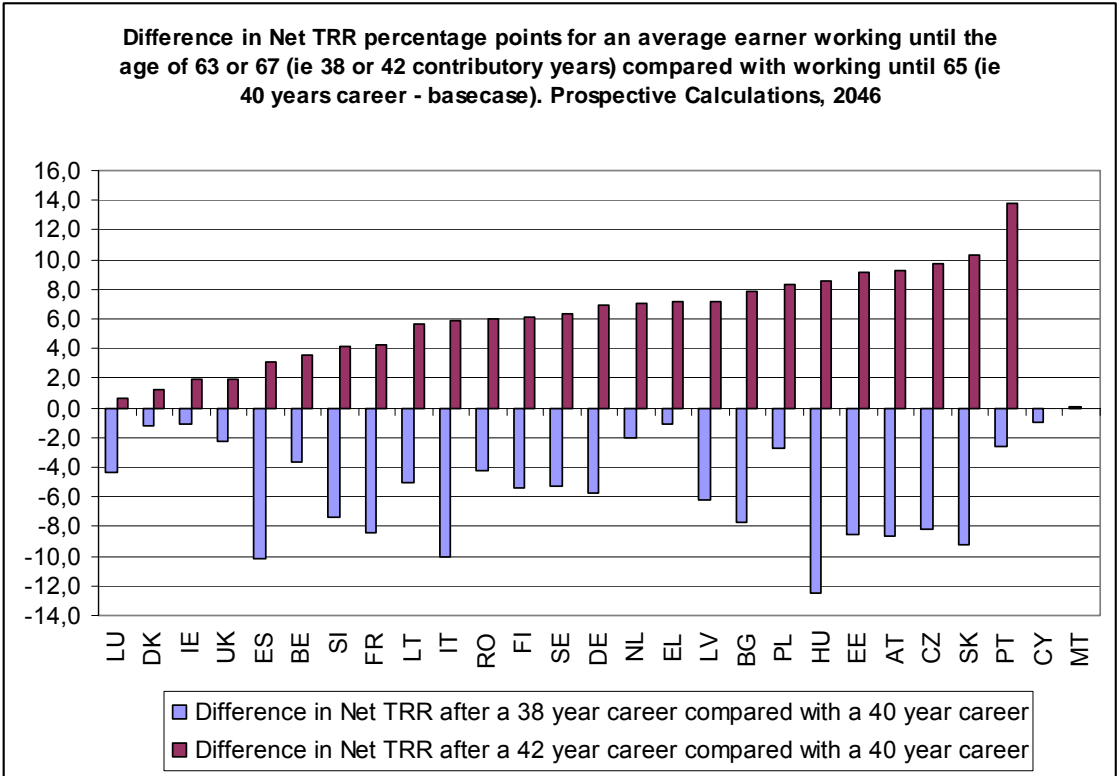
Source: TRR report

Many of these incentives take the form of reductions for early retirement or bonuses for later retirement. These may be carried out in an actuarial manner often based on remaining life expectancy and through bonuses and penalties fixed by legislation. Other incentives to work more and longer are generated by increasing the contributory period in pension systems and strengthening the link between pensions and contributions. Such reforms are significant as prolonging working lives does not only entail leaving the labour market later but also entering it earlier and minimizing long career breaks.

In these variants the dynamics of work incentives can be studied by comparing a base case worker who retires at 65 with one that retires at 63 or at 67 thus decreasing and increasing the seniority of the worker. Figure below illustrates the potential economic consequences of retiring at ages 63 or 67 instead of age 65.

Calculations show that in most Member States delaying retirement results in higher theoretical replacement rates, while earlier retirement usually results in lower replacement rates. In all but a few Member States the increments in pensions for prolonged working lives are higher than the fall in replacement rates with earlier retirement.

II. 5 Variant cases with career breaks

It is an interesting development to study to what extent social protection systems not only protect the current loss of income due to care responsibilities or in the event of unemployment, but also protect future incomes in the form of pension entitlements. This is becoming increasingly important as the number of contributory years needed for a full pension is being extended in many Member States.

II.5.1. Career break for childcare years

In many Member States, absences from the labour market for childcare are typically protected to a certain extent for the first years of absence and usually the protection is equally spread over these years. In this exercise replacement rates are shown for women. Figure 12 shows the differences in prospective (2046) net theoretical replacement rates for a female average earner who makes a career break during 0, 1, 2 or 3 years for childcare compared to one with no children.

Figure 12 – Differences in net TRR for a female average earner who makes a career break during 0, 1, 2 or 3 years for childcare compared to one with no children, in 2046
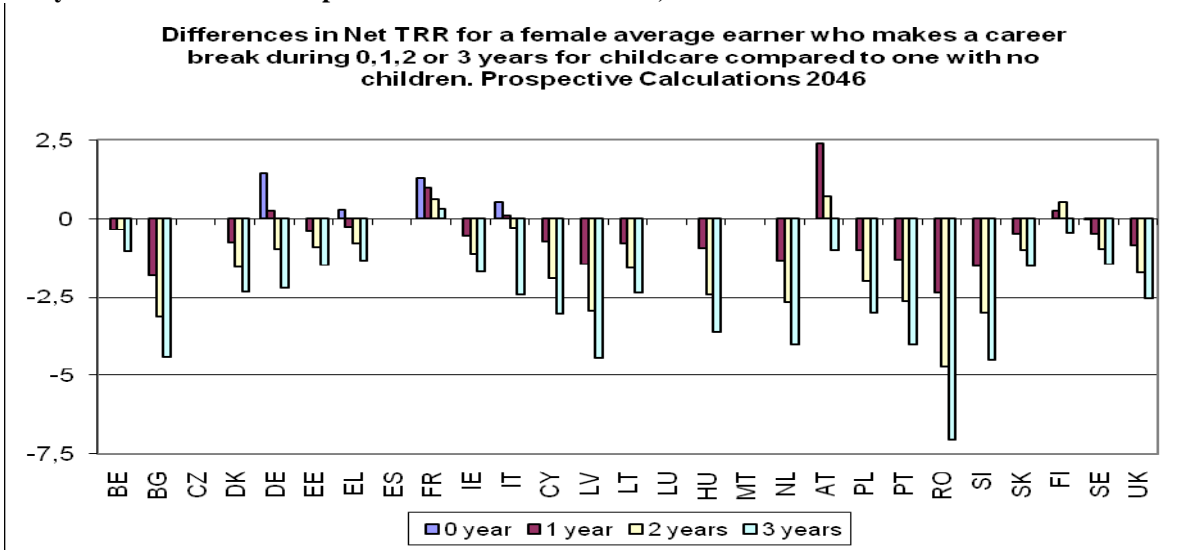
Source: TRR report

In most Member States, childcare years do not give or reduce pension credits if there are no years of absence from the labour market. DE, FR, and IT have systems which provide extra pension entitlements following the birth of a child, which means that even if no actual period of childcare leave is taken, the pension will still be greater than for women with no children (in FR the increase in pensions would be greater with a third child).

In a few Member States, pension rights for up to three years of absence are so well protected that calculations show insignificant or no drop in replacement rates during a career break of

up to three years (e.g. CZ, ES, LU, MT, FI) (In BE there is essentially no drop during career break of up to two years).

In all other Member States, child care years result in a drop in replacement rates compared with a woman with no children, from the first year of absence. This can be due to the features of the pension system where the link between the contributory periods and the pension where non-contributory years for child care are not taken up entirely.

II.5.2. Career break for unemployment years

Figure 8 shows the differences in prospective (2046) net theoretical replacement rates for a man who enters the labour market at 25 and leaves at the legislated retirement age for men and a man with the same profile but with career breaks of 1, 2, 3 years due to unemployment.

In most Member States unemployment breaks lead to drops in replacement rates, showing bigger drops the longer the break. In most Member States, the legislated period of entitlement for unemployment breaks does not stretch out for three years, resulting in a bigger drop in replacement rates during the second or third year of unemployment. In extreme cases these become non-income and non-contributory years.

In most countries unemployment results in a loss of pension entitlements and affects the prospective replacement rate. The results show a decrease of less than 4 pp. in most Member States for three years of unemployment. This implies a considerable protection of pension entitlements in the unemployment benefit system in most Member States. In other Member States the drop in replacement rates can amount to 6 pp. or more (e.g. SK, RO, FI) bringing the adequacy of protection of pension entitlements during unemployment into question, which has to be balanced with the financial incentives for individuals to return to the labour market.

Figure 13 – Differences in net TRR for an average earner retiring at the statutory retirement age with 1, 2, or 3 years career break for unemployment at the end of career compared with no break ("base-case") in 2046
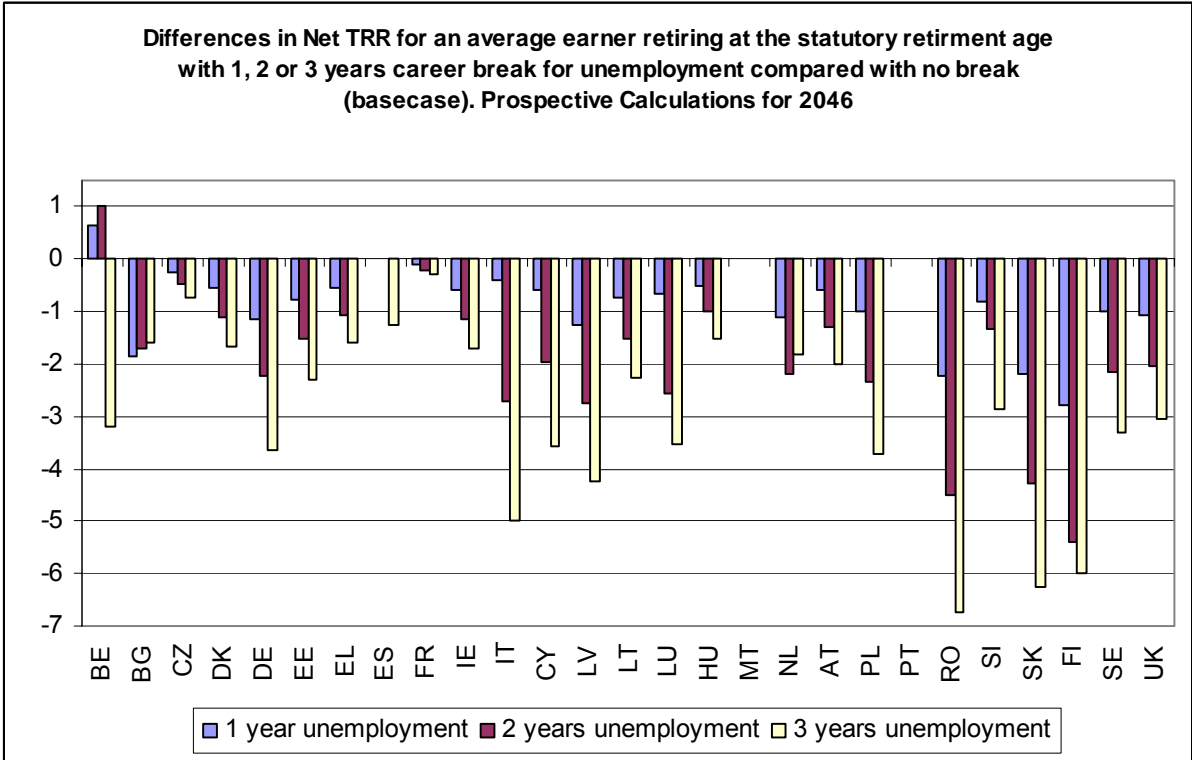
Source: TRR report

The analysis of variant cases is to be extended with the new cases to be simulated under the ongoing update and validation exercise for 2008-2048: higher/lower wage growth and higher/lower rate of returns.

Figure 14 - Net and gross TRR in 2006 and 2046

Net and Gross Theoretical Replacement Rates, 2006 and 2046
(sorted by ascending Net TRR in 2006)

Net TRR 2006 Net TRR 2046 Total Gross 2006 Total Gross 2046
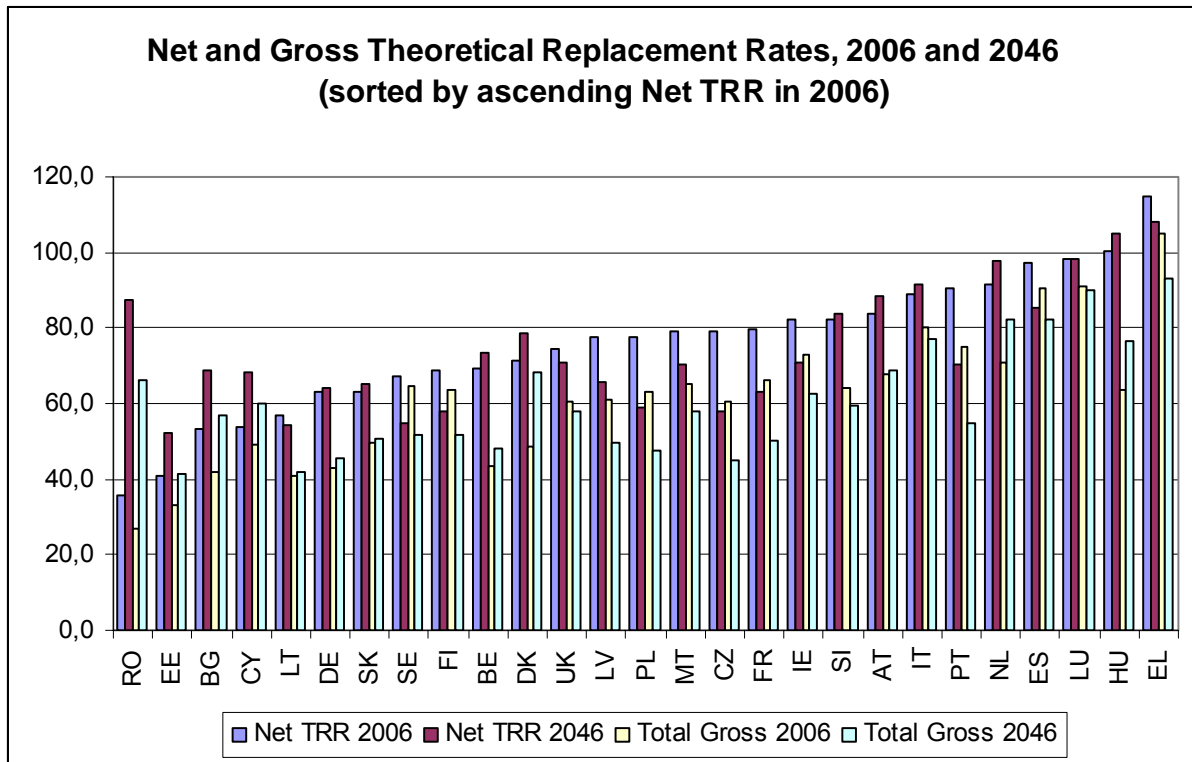
Figure 15 – Breakdown of gross TRR: statutory and occupational pensions

Breakdown of Gross Theoretical Replacement Rates: Statutory pensions (including statutory funded schemes) and occupational pensions

GROSS TRR Statutory pension including Statutory funded scheme 2006
GROSS TRR Statutory pension including Statutory funded scheme 2046
GROSS TRR Occupational pension 2006
GROSS TRR Occupational pension 2046
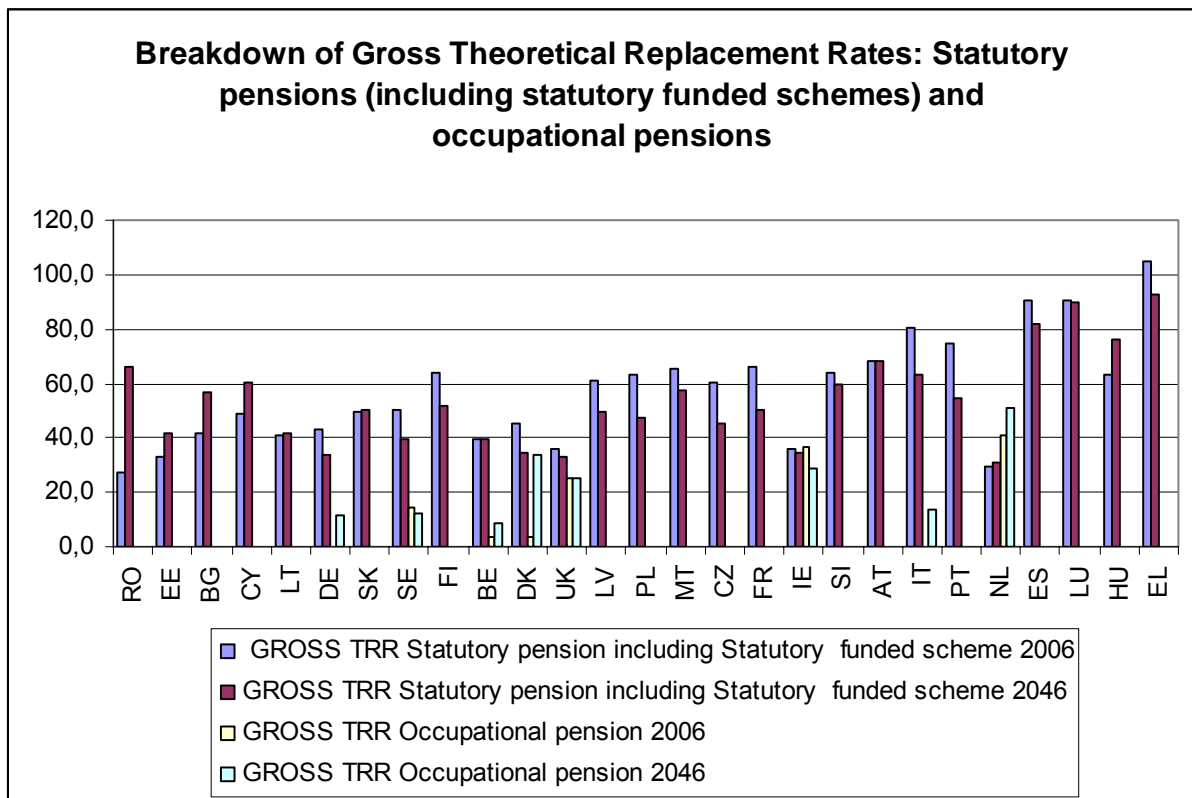
Source: TRR report

Annex 6: Recent pension reforms in Member States

Recent pension reforms incorporated in the 2009 Ageing Report projections[11]

Belgium

The standard retirement age for women has been increased gradually from 63 in 2003 to 64 in 2006 and 65 in 2009. Retirement age remains flexible from the age of 60 for men and women, provided that a 35-year career condition is satisfied. The "older unemployment scheme", reformed in 2002, will keep having an impact on participation rates between 50 and 58.

The law concerning the "Solidarity Pact between Generations" has come into force in 2006. It provided a series of measures to increase participation in the labour market. The statutory age for the early retirement ("*prépension*") scheme embedded in the unemployment insurance has been raised from 58 to 60 and the eligibility conditions (career length) have been made more restrictive. Conditions for entering this scheme before the statutory age ("*prépensions*" for labour market reasons) have also become tighter. Staying at work after the age of 62 is now rewarded by a specific supplement in the pension formula ("pension bonus"). Finally, a structural mechanism for linking benefits to prosperity has been introduced.

Czech Republic

Before the pension reform in 2003, men retired at the age of 60 and women at 53-57, depending on the number of children (one year less per child). Since January 2004 with modification of the retirement age from August 2008, the age of retirement is increased constantly over time (2 months per year for men and 4 months per year for women) to reach 65 years for men and 62-65 for women (still depending on the number of children) born in 1968 and later. Bonus for later retirement is 1.5% of person's calculation base for every additional completed 90 calendar days. Early retirements are subject to penalization, which is 0.9% of person's calculation base for every period of 90 calendar days before the statutory retirement age up to 720 days and 1.5% from the 721st day. But resulting earnings related component must not be lower than 770 CZK (approx. 28 Euro).

Denmark

Denmark introduced in 2006 a major reform package known as the "Welfare Agreement". This reform package affects mainly younger than age 48 at the end of 2006. It reverses the 2004 decision to lower retirement age from 67 to 65. It also increases early retirement (VERB) from age 60 to age 62 between 2019 and 2022 with a minimum contribution period of 30 years instead of 25 for taking a VERB. The normal retirement age is increased from age 65 to 67 between 2024 and 2027. Finally it indexes the retirement ages to the average life expectancy of 60-years old from 2025.

Germany

Since the early nineties a series of major reforms have been passed, aiming at the financial and social sustainability of the public pension scheme. Highlighting the most important reform steps, the reform process began in the mid of the nineties with the increase of the statutory retirement age to the age of 65 years and the introduction of deductions on early retirement (3,6 % per year) accompanied with a bonus for deferred retirement (6,0 % per year). Secondly, at the beginning of this decade, a comprehensive promotion of second and third pillar pension schemes (Riester pension) by subsidising voluntary contributions was introduced. The aim of those reforms was to compensate the envisaged reduction of benefits in the statutory pension scheme by second and third pillar pensions. Thirdly, in 2005 the pension adjustment formula was augmented by a sustainability factor, which adjusts statutory pension payments to population dynamics, whereby the extent of the adjustment is determined by the change in the relation of the workforce to the number of retirees.

The most recent major reform took place in 2007. Though the transition process of increasing the retirement age to 65 years is not yet fully completed, a further increase of the statutory retirement age to the age of 67 was legislated (the age of retirement will be increased one month each year from 2012 on to 2024, then 2 months each year until the age of 67 years will be reached by 2029). The first aim of this reform was postponing the retirement age and thus decreasing the future financial burden. Secondly, the reform will partially compensate the expected decline of the workforce due to population ageing. Therefore, the increase of the retirement age is accompanied by the so-called "Initiative 50 plus" which aims to increase participation rates of older workers by a large range of different measures such as the extension of vocational training and the reduction of employment

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barriers for older workers.

Estonia

Changes in the PAYG system include raising the retirement age for females to 63 by 2016 and revising the benefit formula. Legislation passed in mid-September 2001 set up mandatory individual accounts in the second tier (starting operations in mid-2002), while voluntary accounts became the new third tier.

Spain

The latest reform of the pension system in 2002 (Law 35/2002) abolished mandatory retirement age (65) in the private sector. Workers remaining active after 65 will increase their pension benefit by 2% per year, and both employers and employees' are exempted from paying most social security contributions. For workers age at least 60, social contributions are reduced by 50%, and this amount is increased by 10% to reach 100% for those aged 65. Early retirement is possible from 61 year old, with at least 30 years of paid contributions and registered as unemployed for at least 6 months, but with a high penalty, from 6% to 8% per year (8% for those with only 30 years of contribution, 6% for those with at least 40 years of contribution). Pensions became compatible with part-time work (but the pension benefit was reduced according to the length of the working day).

A new law on Social Security measures was enacted in 2007. This package of reforms contains as main measures: increase in the effective contribution period to be eligible for a retirement pension; partial retirement from age 61 instead of 60 for people entering the system after 1967 (and a minimum of 30 years of contribution instead of 15); incentives for people working after age 65; more restrictive rules to get an invalidity pension.

France

The standard retirement age remains 60. Since 2004, gradual alignment of public sector with private sector by increasing the number of contribution years for entitlement to a full pension (from 37.5 to 40 years between 2004 and 2008). Since 2009, the numbers of contribution years will increase following the increase in life expectancy through a rule keeping constant the ratio of the number of contribution years and the number of years in pension to the level of 1.79 as in 2003. The number of contribution years will be increased to 41 in 2012 and 41.50 in 2020 due to the expected gains in life expectancy (by 1.5 years each 10 years). Introduction of a bonus (3% per year) in case of postponement of retirement. The penalty for early-retirement (before 40 years of contributions) will be changed. Since 2006, the amount of the penalty (la décote) will decrease gradually from 10% to 5% of pension per year of anticipation in 2015 for the private sector and will increase from 0.5% to 5% for civil servants).

Italy

Since 2006, the major changes to pension legislation concern the implementation of the 23rd July Agreement on welfare state between government and social partners (Law 127/2007 and Law 247/2007) and Law 133/2008) improving the possibility of accumulating pension and labour income.

A. Law 127/2007: increase of lower amount pensions through an additional lump sum of 420 euro per year from 2008 (327 euro in 2007) acknowledged to pensioners of 64 and over with an income lower than 1.5 times the minimum pension (8.504,73 euro per year in 2007). Such an increase is reduced or augmented by 20% for contribution careers inferior to 15 years or superior to 25, respectively (18 and 28, for the self-employed). Additional increases are also foreseen for social assistance pensions, starting from 2008, by way of the so-called 'social assistance additional lump sums' ('*maggiorazioni sociali*').

B. Law 247/2007 foresees the following:

- a slowdown of the process of elevating the minimum requirements for early retirement, keeping unchanged the phased-in values foreseen by Law 243/2004. In particular, in 2008 the age requirement, with 35 years of contribution, is 58 for the employees and 59 for the self-employed instead of 60 and 61. Starting from 2013 (it was 2014, according to Law 243/2004) the age requirement, with 35 years of contribution, is 62 for the employees and 63 for the self-employed. In addition, starting from July 2009, workers may access early retirement at an age lower by 1 year, provided that they possess at least 36 years of contributions. The age requirement may be reduced by at most 3 years (but never below the age of 57) for specific categories of workers involved in hard and stressful jobs ('*lavori usuranti*'), within a given amount of resources assigned to a specific fund;

- the application in 2010 of the transformation coefficients, revised on the basis of the procedure foreseen by Law 335/95. The subsequent revisions will be made every three years, instead of every ten years, through a simplified procedure falling entirely under the administrative sphere of competence;

- an increase of the contribution rate of the atypical workers by 3 percentage points (up to 26% in 2010) in order to improve pension adequacy for this category of workers.

C. Law 133/2008 states that old age and seniority pensions may be fully cumulated with labour income. The new legislation improves upon the previous one which foresaw some restrictions in the possibility of cumulating, especially in the case of employees.

Latvia

Under the new three-pillar system with a defined contribution PAYG based on notional accounts, set up in 1996, the standard age requirement for women will increase by 6 months each year to reach 62 by 2008. Those for men reached 62 in 2003.

Lithuania

The standard minimum retirement age for women (55 years and 4 months in 1995, 58.5 years in 2003) will increase by 6 months each year to reach 60 years in 2006. The retirement age for men was gradually increased (2 months per year) from 60 years and 2 months (in 1995) up to 62.5 in 2003.

Hungary

The 1997 pension reform:

(1) aimed to raise gradually (by one year in every two years) the statutory pension age for men from 60 to 62 and for women from 55 to 62 by 2009;

(2) started to build up a new framework of mandatory pension system by splitting on two part, dominantly PAYG pension pillar and partly the funded pension pillar;

(3) the new mixed system (appr. 3/4 payg-1/4 funded pillar) is obliged to step in for the new entrants, for the others the choice was optional.

In 2006-2007, the Hungarian Parliament adopted (by two regulations) a package of reforms which specifies that the early retirement is allowed only 2 years before normal retirement instead of 3 before. Thus from 2013 the early retirement is possible from age 60 both for women and men. From 2013 all early pensions will be subject to a reduction. The rate of reduction, depending on the time remaining until retirement age, would be 0.3% per month for the 61-62 age-group and 0.4% per month below the age of 61. It introduces also changes in the calculation of the benefits, a minimum contribution from 40-41 for early retirement and some favourable retirement conditions for those working in potentially health-damaging occupations.

Malta

In December 2006, the Maltese Government completed the legislative process associated with the enactment of the pensions reform bill. Among the most important elements of the reform there is a staggered rise in pension age from 60 years for females and 61 years for males to 65 years for both by 2026 and the gradual lengthening of the contribution period for full entitlement to the two-thirds pension from 30 years to 40 years. Meanwhile, the calculation of pensionable income will reflect the yearly average income during the best 10 calendar years within the last forty years, as opposed to the previous regime which consisted of the best 3 years of the last ten years for employed persons and the average of the best ten years for self-employed persons. In addition, prior to the reform, the maximum pensionable income was fixed by the law though in recent years it was revised in line with the cost of living adjustment. Following the reform, maximum pensionable income will evolve in a more dynamic fashion and will be increased annually by 70 per cent of the national average wage and 30 per cent of the inflation rate as from 1 January 2014 for persons born after 1 January 1962.

Austria

The minimum retirement age for men will increase from 61.5 years to 65 years; for women the age will rise from 56.5 to 60 years. The increase will be phased in gradually beginning in July 2004 and by 2017 early retirement will be eliminated. Meanwhile, larger penalties are imposed on early retirement (4.2% of reduction per year instead of the former 3.75%, up to a maximum of 15%), within the age of 62-65. The statutory retirement age for women will be increased gradually between 2019 and 2034 to reach the retirement age for men at 65. A bonus for later retirement up to the age of 68 years (4.2% per year, up to a maximum of 10 %) is introduced. From January 2005, harmonised guaranteed pension accounts is established (Act on the harmonisation of pension system, approved in November 2004). In the new system of individual, transparent pension accounts (with a clear reporting of benefits accrued from contributions paid in and other credits acquired, such as from active child and elderly care) the key rule will be : 45-65-80 (45 contribution years, retirement age of 65 and a gross replacement rate of 80% of average life earnings). Pension benefits will be adjusted to consumer price index, starting in 2006.

Poland

The general system: All insured persons born after 1948 are covered by the new defined contribution PAYG with notional accounts and three-pillar pension system. The standard retirement age remains 65 for male and 60

for female. There will be no early pension for those born after 1948 and retiring after 2008, with the exception of miners. Since 2007, disability pension insurance contributions were reduced.

Portugal

Portugal introduced in 2007 a "Sustainability factor" linking initial benefits to average life expectancy when the worker retires (at 65, which is the legal retirement age). Individuals have the option of postponing retirement beyond legal retirement age to compensate (at least partially) the financial penalty given by the sustainability factor. They introduced also a "national strategy for the promotion of active ageing" which is a package of measures that encourages older workers to remain in the labour force (trainings, improvement of older workers employment, higher penalty in case of early retirement and benefits granted in case of long contributive careers).

Slovenia

Under the new Pension and Disability Insurance Act entered into force on 1 January 2000 (a three-pillar modernised defined benefit PAYG system plus compulsory and voluntary supplementary funded schemes), the standard retirement age has been increased. It is now possible to retire between 58 and 63 for men and 61 for women (the minimum retirement age was 53 for women and 58 for men before the reform). Women that worked before the age of 18 can retire earlier (but not before the age of 55). Special regulations reduce the age of retirement to 55 in certain cases (before the reform it was possible even below 50). The minimum retirement age is raised from 53 to 58 for women (the same level for men). The accrual rate was reduced by 2% to 1.5% since 2000. Later retirement has been encouraged: a person who fulfils the requirement for pension but continues to work beyond the age 63/61 will receive an additional pension increase (3.6% the first additional year, 2.4% the second year and 1.2% in the third, plus the normal rate of accrual, 1.5% per year).

Slovakia

Under the reformed (from 2004) three–pillar pension system, the standard retirement age has increased from 60 to 62 for men (9 month per year) by 2006 and from the former 57 (gradually reduced down to age of 53 for women who brought 5 children or more) to 62 for women by 2014. A worker can still retire earlier if the combined benefit from the first and the newly introduced second pillar equal at least 60% of the minimum living standard determined by the government. In this case, the pension is reduced by 6% per year, while a bonus of 6% is introduced for those postponing their retirement. It is also possible to get pension benefit while working.

Finland

Since 2005, flexible old-age retirement (63 to 68 years) with an increase of the accrual rate to 4.5% for those continuing to work beyond the age of 63. The ceiling on the maximum pension is abolished. A new early retirement scheme is introduced with a minimum age of 62 and an actuarial reduction of 0.6% per month prior to 63. Those borne after 1949 are not eligible for the unemployment pension scheme, which is replaced by an extended period of unemployment benefit (the so-called "unemployment pipeline to retirement (currently 57-65).

Sweden

The pension reform was approved by Parliament in 1999. Under the new notional defined contribution system is possible to retire from age 61 onwards, with an actuarially fair compensation for those who stay on in the labour force. Every year of contributions is important for the pension benefit. A person with an average wage will increase his yearly pension benefit by nearly 60 per cent if he postpones his retirement decision till age 67 compared to leaving at age 61. Yearly "statement of account" informs the individual of costs and benefits of retirement. The new system is phased in gradually for generations born between 1938 and 1953, and will affect generations born after 1953 fully.

The United Kingdom

Between 2010 and 2020, women's pensionable age will gradually rise from 60 to 65, as for men. The Pension Act 2007 adds also several measures in which we have the gradual increase of the state pension age between 2024 and 2046 to 68 for men and women (instead of 65 before).

Reforms enacted after July 2008

The projections in the 2009 Ageing Report were carried out on the basis of legislation and policies in place by July 2008. In some countries, reforms have been implemented after that date and are thus not incorporated in the projections. A brief description of recent reforms in some Member States is provided here.

Bulgaria*

Since October 1, 2008 all old-age pensions, assigned before December 31, 2007, were recalculated, using a different base which is now the 2007 average insurance income (EUR 203.6). The recalculation was made to unify pension-determining parameters (individual coefficient and length of service), and to overcome their different size.

As of 1 January 2009 the insurance contribution rate to the State Social Insurance Pensions Fund was reduced from 22% to 18%. The contribution rate of the employers was set at 10% and that of the employees - at 8%. In addition to the employers and employees, the state entered as a third party providing 12% of the overall amount of the annual contributions to the State Social Insurance Pensions Fund.

Following the change in the insurance contribution rate the total social security burden was reduced by 2.4pps for employers, while for employees it remained at the same level. Not taking into account the health insurance contribution, the social security burden dropped by 3.6pps for employers and by 0.8pps for employees.

As of January 1, 2009 the minimum pensions were increased by 10.0%.

The old-age pensions were raised as of April 1, 2009 by increasing the weight of each insurance year in the pension formula from 1 to 1.1. In addition starting from 1 April, the maximum pension amount (excluding bonuses thereto) was increased to EUR 357.9, from EUR 250.5.

As of July 1, 2009 pensions were updated by 9.0% following the so called Swiss rule.

* Changes have been incorporated in the Law on the Budget of the State Social Security for 2009 (SG N 109/23.12.2008) and the amendments in the Code of social insurance (SG.N 42/05.06.2009).

Italy

According to the Law no. 102/2009 (conversion in law, with amendments and integrations, of the Decree Law no. 78/2009) the statutory retirement age of women in the public sector (currently 60) is foreseen to increase by one year every two, starting from 2010, in order to equalise the statutory retirement age of men (currently 65) by 2018. Such intervention has been adopted to implement the sentence of the European Court of Justice imposing the elimination of any gender difference in the retirement age in the public sector. Besides, law no. 102/2009 lays down a five-year indexation mechanism linking the age retirement prerequisites to changes in life expectancy ascertained over the preceding five-year period. Such a mechanism is foreseen to be applied starting from 2015, once the increasing process of contribution and age requirements to retire, already stated by the current legislation, is fully phased in. As regards the first application of the mechanism, the increase of the statutory retirement age, related to changes in life expectancy over the preceding five-year period, cannot exceed three months. The normative dispositions concerning the technical definition and the enforcement of such an indexation mechanism will have to be enacted by 31st December, 2014.

Cyprus

Within the context of combating the effects of demographic ageing on the Social Insurance Scheme, the Government has adopted measures to safeguard the long-term financial sustainability of the Social Security Scheme at least until 2048. Social Insurance legislation has been amended as of 1 April, 2009 (Amendment Law 22(I)/09), with measures aiming at increase in the revenue and containment of the expenditure of the Social Insurance Fund.

1. Revenue side

– Gradual increase in contribution rate – 1.3p.p. every 5 years: from 1.4.2009 (1st increase) until 1.1.2039 (final increase)

2. Expenditure side

– Increase in the number of years of contribution required for eligibility to old-age pension – 10 years paid contributions, instead of 3
– Increase in the number of years of contribution required for eligibility to the old-age lump sum – 6 years paid contributions, instead of 3
– Maximum limit on the number of education/ training credits granted - 6 years, instead of unlimited number of years
– Abolition of the right, as of January 2010, to receive unemployment benefit for all those insured persons who take early or normal retirement, and are eligible for pension benefits from a non-contributory occupational pension plan.

The amending legislation also provides for on-going monitoring of the long-term financial position of the Social Insurance Fund. Every three years the Ministry of Labour and Social Insurance should present to the Parliament an actuarial valuation of the system. Based on the actuarial valuation additional measures to secure long-term viability of SIF may be submitted if needed.

In addition to the measures above the Government aims at improving the investment returns of the reserve of the Social Insurance Fund by introducing a new investment framework and policy which will be based on internationally accepted governance and investment process standards and best practices.

Latvia

Since July 2008, the Latvian authorities have introduced the following policy changes:

The amount of early retirement pension is 50% from calculated pension (till 30 June, 2009 it was 80%).

From 2011 - CPI based indexation (before: indexation was depending on individual pension amount – low-amount pensions were indexed on April 1, considering an actual consumer price index and on October 1, considering an actual consumer price index and 50 per cent of real growth of contribution wage sum; medium-amount pensions were indexed annually on October 1, considering an actual consumer price index; high-amount pensions were not indexed) and indexation is frozen in 2009 and 2010.

Reduction of contribution rates to 2nd tier: 2009- from 8% to 2%; 2010 -2%; 2011 -4%; 2012 and for all next years -6% (before: 2009 -8%; 2010 -9%; 2011 and for all next years -10%).

Poland

Bridging pensions have been implemented from 2009, which replaces early retirement provision for some categories of workers. This is temporary solution for workers, whose started work in special conditions before 1999.

Portugal

Within the scope of the 2006 Agreement on the Social Security Reform, the new legislation on the financing (contributive) system of the Social Security General Regime was published in September 2009 (Law no. 110/2009 of 16 September) and discussed in National Parliament but postponed in implementation to 2011 due to the current economic crisis. The main elements of the new contributive code, impacting on the financial sustainability of the social security system, through the expected increase in revenue, are the following.

i) In relation to wage earners:

Enlargement of the contributive base to fringe benefits previously not considered (travel expenses, participation in enterprise profits,…) in a progressive way (33% in 2011, 66% in 2012 and 100% from 2013 on);

Differentiation of the employers' contribution rate (23.75%) according to the labour contract type by decreasing 1 percentage points (p.p.) in the case of permanent contracts and increasing it 3 p.p. for temporary contracts;

Incentives to postpone retirement by reducing further the contributory rate for those who are eligible to a full pension (the reduction applies to employer and employee).

ii) Concerning self-employees:

Entities that contract self-employees' services have to contribute to Social Security, with the contribution base being 70% of the service paid. The contribution rate is 2.5% in 2011 and 5% from 2012 on;

Employees contributive base is now determined by the Social Security services taken into account tax declared earnings and it is foreseen a progressive (yearly) adjustment of the contributive base;

Employees contributive rate is now harmonised (29.6% over 20% of the sales amount or 24.6% over 70% of the value of services provided).

iii) For all workers:

Harmonization of the contribution rates according to the risks covered, reducing the number of special regimes.

Slovakia

- Opening of the second pillar in 2009:

For the second time, from 15 November 2008 to 30 June 2009, all pension savers were again (as in the year 2008) given the chance to leave the 2nd pillar while, at the same time, those individuals who have not entered yet were allowed to join in. During this period 66 thousand people left the 2nd pillar and 14,6 thousand people joined the 2nd pillar. Because of this measure, the number of savers in the 2nd pillar declined by 3,5%.

Hungary

The 2009 reform had three strands:

1) Increase in the statutory retirement age from 62 to 65 between 2014 and 2022 (increase by 6 months for every cohort, those born in 1952 should retire at the age 62.5, born in 1953 at 63 etc.). The advanced retirement age also increases gradually form 60 to 63.

2) Less generous indexation of pensions dependent on real GDP growth, as of 2010

share of component in index

real GDP growth	consumer prices	nominal wages
<3.0	100	0
3.0-3.9	80	20
4.0-4.9	60	40
5.0<	50	50

The earlier used Swiss indexation formula will be applied only if the real GDP growth exceeds 5.0%.

3) Abolition of 13th month pension from second half of 2009 and introduction of pension premium.

13th pension has been phased in between 2004 and 2006, then capped at HUF 80,000 (average pension benefit) in 2008, and cancelled from second half of 2009 (so first of two instalments has been paid)

Pension premium will be provided if the real GDP growth is higher than 3.5%. The amount of pension premium gradually increases according to the size of GDP growth. If the GDP growth is 7.5% or more, this

amount is equal to the earlier 13th month pension, but the premium is also capped at HUF 80,000.

In consequence of these reforms future sustainability will be improved and gross social security pension expenditure will reach 10.5% of GDP in 2060 instead of 13.8% projected in the Ageing Report 2009.

Annex 7: Current pension expenditure

In 2007, there was a wide difference in the average public pension benefit ranging from less than 3000 euro or less per year (Bulgaria, Romania, Latvia, Lithuania and Estonia) to 14000 euro or more per year (Austria, Sweden, Denmark, France, Norway and Luxembourg). These wide differences reflect that average wage income levels are very different (ranging from less than 5000 euro per year to more than 25000 euro per year)[12] and the diversity of pension systems and arrangements (see Figure 16).[13]

Figure 17 shows the public pension expenditure in 2000 and 2007. In the EU27, public pension expenditure was about 10.1% of GDP in 2007. Compared with 2000, the pension/GDP ratio has increased in eight countries (Romania, Norway, Malta, Portugal, Denmark, Sweden, France and Italy) over this period.

Figure 16 - Average gross wage and average gross public pension benefit in 2007 (1000s euro)
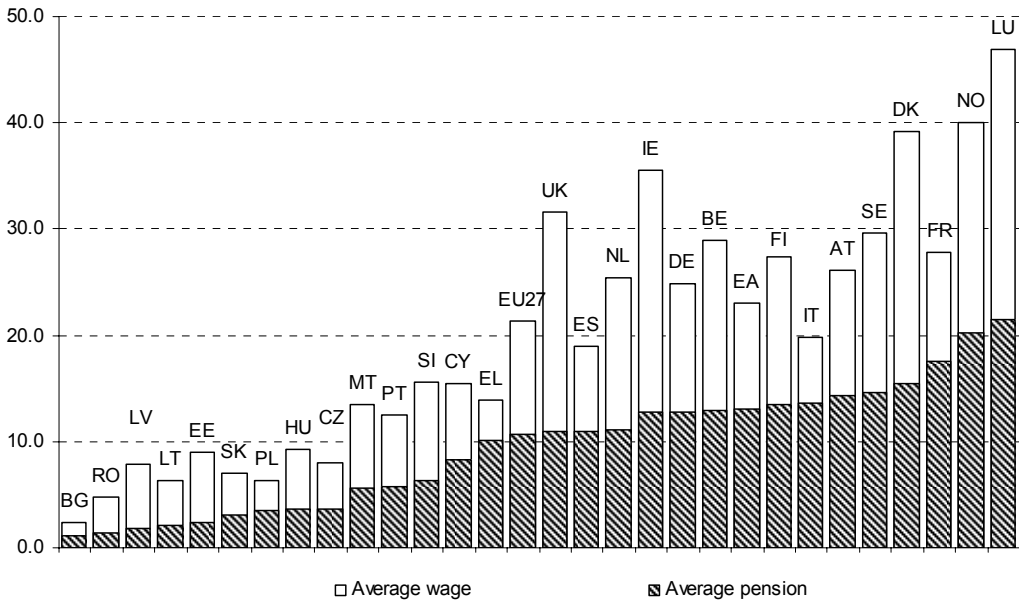
Source: Commission services, EPC

A very large difference in the level of public pension spending can be observed in 2007 among Member States. It ranges from 6% of GDP or below in Latvia, Lithuania and Ireland to 14% in Italy. In many Member States (Denmark, France, Hungary, Italy, Malta, Norway, Portugal, Romania and Sweden), pension expenditure has increased faster than GDP, but in some others (Belgium, Bulgaria, the Czech Republic, Germany, Spain, Finland, Lithuania, Luxembourg, Latvia, the Netherlands, Poland, Slovenia) it has increased at a slower pace.

Half of Member States (the Netherlands, Spain, Luxembourg, Norway, Denmark, Sweden, Finland, Germany, Portugal, Poland, Austria, France and Italy), has also provided information on government tax revenues from public and private pensions. However, the incomplete coverage hampers a comparable examination across the EU. The presence of tax revenues from public pensions means that the net public pension expenditure is lower. However, in most countries the size of these taxes is rather small, on average of the order of 1 ½ p.p. of GDP in 2000 and 2007 (see Figure 18).

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[12] It is important to note that calculations of average wages are different in OECD and ISG projections.

[13] In some countries (e.g. Slovenia, Hungary) pension benefits are not subject to taxation so gross pensions equal net pensions.

In some countries, tax revenues from private pensions are large (e.g. in the Netherlands, Denmark). This is mainly due to the maturity of occupational pensions.

Figure 17 - Average Gross public pension expenditure in 2000 and 2007 (% of GDP)
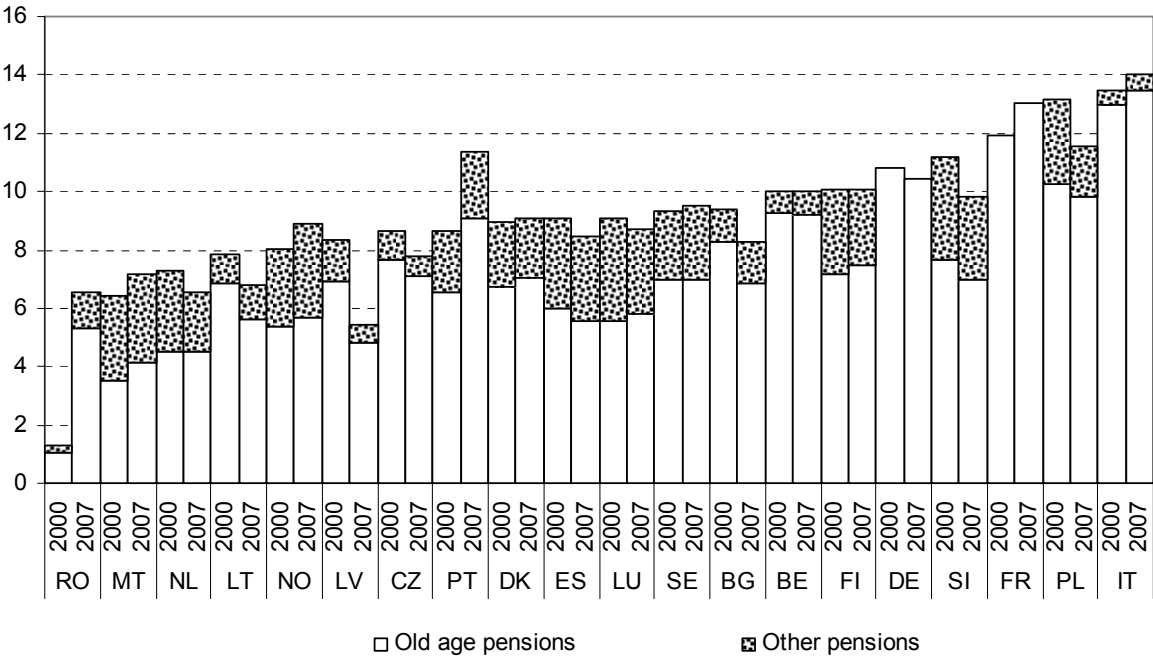
Source: Commission services, EPC

Note: The graph presents only the countries which provided information in both years.

Figure 18 - Gross and net public pension expenditure in 2000 and 2007 (% of GDP)
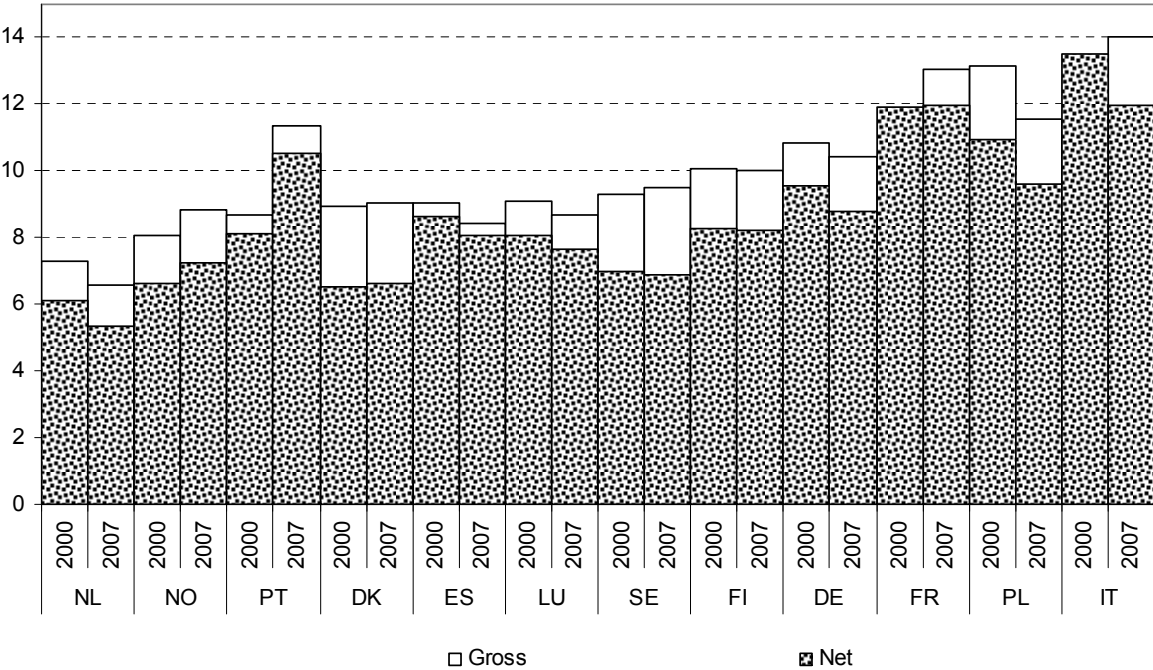
Source: Commission services, EPC

Note: The graph presents only the countries which provided data for both years and a tax on pension is non zero. France and Italy did not provide data for 2000.

Annex 8: Decomposition of pension expenditure

In order to analyse the dynamics and the factors of the pension spending to GDP ratio, the following decomposition is used:

$$\frac{Pension\ Exp.}{GDP} = \overbrace{\frac{Population\ 65+}{Population\ 15-64}}^{Dependency\ Ratio\ Effect} \times \overbrace{\frac{Number\ of\ Pensioners}{Population\ 65+}}^{Coverage\ Ratio\ effect}$$

$$\times \overbrace{\frac{Population\ 15-64}{Working\ People\ 15-64}}^{Employment\ Rate\ Effect} \times \overbrace{\frac{Average\ Pension}{\frac{GDP}{Hours\ Worked\ 15-71}}}^{Benefit\ Ratio\ Effect}$$

$$\times \underbrace{\frac{Working\ People\ 15-64}{Hours\ Worked\ 15-71}}_{residual}$$

In particular, we analyse the percentage change in the public pension expenditure to GDP ratio. The overall percentage change can be expressed as a sum of the contribution of the four main factors, i.e. the dependency ratio contribution, the coverage ratio contribution, the employment rate contribution and the benefit ratio contribution.

The dependency ratio effect/contribution quantifies the impact of the change in the old age dependency ratio on the pension to GDP ratio. The dependency ratio is defined as a ratio of the population aged over 65 to the population aged from 15 to 64. An increase in this ratio indicates a higher proportion of older individuals with respect to working age population, i.e. an ageing population. As the dependency ratio increases, the pension to GDP ratio moves in the same direction.

The coverage ratio effect is defined as the number of pensioners of all ages to population over 65 years. Development in the coverage ratio provides information about developments of the effective exit age and the percentage of population covered. As the coverage ratio increases, the pension expenditure to GDP ratio increases as well.

The employment rate effect is defined as a ratio of population aged 15-64 to the number of working people aged 15-64 (i.e. 1/employment rate). As the employment rate increases, the ratio of pension expenditure to GDP falls down.

The benefit ratio effect indicates the development of the relative value of the average pension (public pension spending / number of pensioners) with respect to the average wage (proxied by the change in the GDP per hours worked).

Table 4 - Decomposition of the public pension spending to GDP ratio over 2007 – 2060 (% of GDP)

	2007 level	Dependency ratio contribution	Coverage ratio contribution	Employment effect contribution	Benefit ratio contribution	Interaction effect	2060 level
BE	10.0	7.4	-0.9	-0.5	-1.0	-0.3	14.7
BG	8.3	9.1	-3.0	-0.5	-1.8	-0.8	11.3
CZ	7.8	9.5	-3.5	-0.5	-1.2	-1.1	11.0
DK	9.1	6.5	-4.9	-0.1	-0.5	-0.7	9.2
DE	10.4	7.9	-1.9	-0.8	-2.2	-0.8	12.8
EE	5.6	4.6	-1.6	-0.2	-3.1	-0.4	4.9
IE	4.0	5.9	-1.5	-0.2	0.7	-0.3	8.6
EL	11.7	12.7	-0.4	-0.6	0.8	-0.1	24.1
ES	8.4	10.7	-0.9	-0.9	-1.7	-0.5	15.1
FR	13.0	8.4	-2.2	-0.5	-4.0	-0.7	14.0
IT	14.0	10.4	-3.2	-1.1	-5.5	-1.0	13.6
CY	6.3	10.8	1.6	-0.5	-0.3	-0.2	17.7
LV	5.4	5.7	-1.6	-0.2	-3.9	-0.4	5.1
LT	6.8	9.6	-2.4	0.0	-1.8	-0.8	11.4
LU	8.7	8.4	5.2	0.0	1.2	0.3	23.9
HU	10.9	11.3	-5.4	-0.7	-1.1	-1.0	13.8
MT	7.2	11.3	-3.1	-0.7	-0.5	-0.8	13.4
NL	6.6	6.6	-1.5	-0.2	-0.6	-0.4	10.5
AT	12.8	9.9	-2.6	-0.5	-5.0	-1.0	13.6
PL	11.6	13.4	-6.3	-1.0	-7.1	-1.8	8.8
PT	11.4	9.8	-1.7	-0.6	-4.5	-0.9	13.4
RO	6.6	13.6	-4.9	0.3	1.7	-1.5	15.8
SI	9.9	13.7	-3.5	-0.1	-0.7	-0.7	18.6
SK	6.8	11.7	-3.9	-0.6	-2.4	-1.4	10.2
FI	10.0	8.7	-3.1	-0.6	-0.9	-0.7	13.4
SE	9.5	5.6	-0.4	-0.4	-4.3	-0.6	9.4
UK	6.6	4.2	-1.4	-0.3	0.5	-0.3	9.3
NO	8.9	8.2	-1.2	0.3	-2.4	-0.2	13.6
EU27	10.1	8.7	-2.6	-0.7	-2.5	-0.6	12.5
EA	11.0	9.0	-2.0	-0.7	-2.9	-0.7	13.8
EA12	11.1	8.8	-1.9	-0.7	-2.9	-0.7	13.8
EU15	10.2	7.7	-1.8	-0.6	-2.3	-0.6	12.6
EU10	9.7	11.8	-4.9	-0.7	-3.9	-1.3	10.7
EU25	10.2	8.5	-2.4	-0.7	-2.5	-0.6	12.5

Source: 2009 Ageing Report.
Note: Hungary reformed its pension system in 2009. According to the revised pension projections, public pension expenditure is projected to decrease from 10.9% of GDP in 2007 to 10.5% of GDP in 2060, i.e. by 0.4 p.p. of GDP, compared with the projection in the 2009 Ageing Report, where an increase of 3 p.p. of GDP between 2007 and 2060 was projected. The revised projection is not included in this table.

Table 5 - Decomposition of the sum of public spending and occupational and private pensions to GDP ratio over 2007–60, (in percentage points)

	2007 level	Dependency ratio contribution	Coverage ratio contribution	Employment effect contribution	Benefit ratio contribution	Interaction effect	2060 level
BG	8.3	9.1	-3.2	-0.5	-1.8	1.2	13.0
DK	14.7	6.5	-8.0	-0.2	-0.8	6.0	18.1
EE	5.6	4.6	-1.8	-0.2	-3.6	2.1	6.7
IE	5.2	5.9	-2.1	-0.3	0.9	1.6	11.3
ES	9.0	10.7	-0.9	-1.0	-1.9	0.5	16.4
LV	5.4	5.7	-2.0	-0.2	-5.2	6.3	10.0
LT	6.8	9.6	-2.7	0.0	-2.0	1.7	13.3
HU	10.9	11.3	-4.5	-0.7	-2.4	1.5	16.0
NL	11.7	6.6	-2.7	-0.3	-1.2	8.4	22.6
PL	11.6	13.4	-6.5	-1.0	-7.6	0.7	10.6
PT	12.0	9.8	-1.6	-0.6	-4.9	-0.7	14.0
RO	6.6	13.6	-5.1	0.3	1.7	0.7	17.7
SI	9.9	13.7	-3.5	-0.1	-0.7	0.0	19.3
SK	6.8	11.7	-4.2	-0.6	-2.7	1.4	12.4
SE	12.2	5.6	-0.5	-0.5	-6.2	3.7	14.4

Source: 2009 Ageing Report.

Note: Other pensions cover occupational and private pensions. This table only includes Member States that have provided private pillar pension expenditure projections in addition to public pension projections, and does consequently not include all Member States. Hungary reformed its pension system in 2009. The revised projection is not included in this table. See note to Table 4.

Annex 9: Detailed comparison with the 2001 and 2006 rounds of projections

Table 6 presents the change in pension expenditure as a share of GDP between 2005 and 2050 in consecutive projections: the common projection exercises in 2001, 2006 and 2009. It reveals that, for most countries, the change in pension expenditure as a share of GDP has been revised over time, sometimes significantly. On average in the EU-15, the reduction in the projection increase in the pension ratio has been reduced by almost ¾ p.p. of GDP. Looking at the EA12, the projected reduction in the projected increase is larger, about 1 ½ p.p. of GDP.

Table 6 – Long-term pension projections compared (in percentage points)

Pension expenditure, change in p.p. of GDP, 2005-2050
projection carried out:

	2001	2006	2009
BE	3.8	5.1	4.8
BG	:	:	2.5
CZ	:	5.6	2.4
DK	2.0	3.2	0.5
DE	5.5	1.9	1.9
EE	:	-3.0	-0.3
IE	4.5	6.5	4.0
EL	12.4	:	12.3
ES	8.5	7.0	7.0
FR	3.6	2.0	1.2
IT	0.3	0.4	0.7
CY	:	12.8	9.2
LV	:	-0.9	0.4
LT	:	1.9	3.6
LU	1.9	7.4	13.4
HU	:	6.4	2.4
MT	:	-0.5	4.8
NL	5.3	3.8	3.7
AT	2.5	-1.0	1.2
PL	:	-5.7	-3.1
PT	2.3	9.3	2.0
RO	:	:	7.1
SI	:	7.3	8.3
SK	:	1.5	2.6
FI	5.0	3.3	3.2
SE	1.5	0.9	-0.5
UK	-0.9	1.9	1.5
EU27	:	:	2.2
EA	:	:	2.8
EU15	2.9	2.3	2.2
EU12	:	:	1.5
EU25	:		2.1
EA12	4.2	2.6	2.8
EU10	:		0.4

Source: 2009 Ageing Report, Commission services, EPC

Figure 19 presents the change in public pension expenditure as a share of GDP between 2007 and 2050 in the current projection exercises and as projected in 2006. It reveals that, for most countries, the change in pension expenditure as a share of GDP has been revised over time, sometimes significantly (as reflected by the distance from the 45 degree line in Figure 22).[14] Compared with the 2006 pension projection exercise, pension expenditure is now projected to be fairly similar for the EU25 (rising by 2.1% of GDP, compared with 2.2% of GDP in the 2006 Ageing Report).[15]

Pension expenditure is now projected to increase more (or decrease less) in Estonia, Italy, Latvia, Lithuania, Luxembourg, Malta, Austria, Poland, Slovenia, Slovakia, with large upward revisions of 1.5 p.p. of GDP or more in Estonia, Lithuania, Luxembourg, Malta, Austria, Poland.[16] By contrast, a lower increase (or higher decrease) is now projected in Belgium, the Czech Republic, Denmark, Ireland, France, Cyprus, Hungary, Latvia, the Netherlands, Portugal, Finland, Sweden, the UK, with significant downward revisions of 1.5 p.p. of GDP or more in the Czech Republic, Denmark, Ireland, Cyprus, Hungary and Portugal.

Figure 19 - Change in the public pension to GDP (2007-50) compared: 2006 Ageing Report and current projection (in percentage points)

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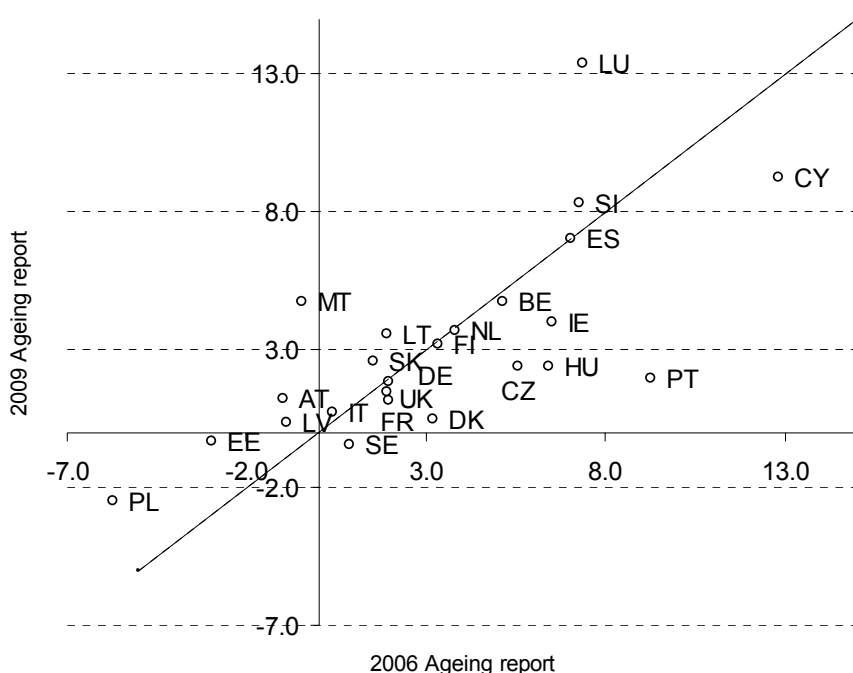
[14] A small discrepancy between the changes in the consecutive projection exercises may be due to different starting year used; for the 2006 projection, the change is calculated over the period 2004-2050 and in the current projection it is calculated over the period 2007-2050.

[15] It should be noted that the projection for Greece is included in the current projection exercise, which was not the case in the 2006 Ageing Report. Excluding Greece from the EU25 aggregate would lead to a lower increase in the current projection, of 1.9 p.p. of GDP.

[16] For Luxembourg, substantial differences between 2006 and 2009 projections results are due to the fact that a new projection methodology for cross border workers is introduced in the 2009 exercise, leading to a sensible reduction in labour input and potential growth.

The revisions of projected changes in pension expenditure over the long-term are due to several factors, notably but not exclusively due to reforms of pension systems. Also other factors can have an effect, such as changes in the demographic and macro-economic assumptions, changes in modelling pension expenditure over the long-term and changes in the coverage of the projection (data on pension schemes covered in the projection).

In order to shed light on the reasons behind these revisions, a comparison of a decomposition of the change in public pension expenditure between the 2006 Ageing Report and the current projection exercise into four factors is conducted, like in section 3 above.

The overview Table 7 presents a decomposition of the public pension to GDP ratio in 2006 and 2009 projections. An analysis of the reasons behind the revisions for each country is provided in the country fiches on the pension projection and results envisaged for release in the latter half of 2009. The main points may be summarized as follows:

- As shown in section 3 above, the main factor behind the projected increase in pension expenditure is the demographic transition to an older population. The dependency effect has decreased in a majority of countries Portugal, Ireland, Cyprus, the Czech Republic, Austria, Spain, the UK, Italy, Hungary, Denmark, Belgium, Finland, France, Slovenia, Germany and Sweden, and it has increased only in few the Netherlands, Luxembourg, Slovakia, Estonia, Poland, Latvia, Lithuania and Malta.

- The other factors are in general offsetting the increase that follows from the larger number and share of older people. In the 2009 projection exercise, the fall in coverage is more accentuated, thus offsetting the dependency effect to a greater extent in a majority of countries. These reflect changes in pension policies that have aimed at increasing the effective retirement age either through increases in the statutory retirement age and/or through tightening access to early and disability pension schemes. Compared with the 2006 projection exercise, the largest reductions in the coverage ratio are projected in Malta, Denmark and the UK. By contrast, it increases in Austria, Spain and Luxembourg. An increase in the coverage effect may be due to a higher take-up of pensions by women thanks to their increasing participation in the labour market even if there is a lower take-up of pensions by men due to reforms undertaken.

- The employment effect contributes to offset the dependency effect too. As already seen before, the effect is rather small in most countries and it generally offsets less in the current exercise compared with the 2006 projection. This partly follows from the fact that employment rates have generally risen in the period since the previous projection was carried out and that the structural unemployment rates have not been reduced to the same extent. This leads to lower gains in employment rates over the projection period compared with the situation at the time of the previous projection.

- The benefit effect shows the extent to which average pensions increase at a different pace than average income (proxied by output per worker). The benefit effect can offset the dependency effect if: (i) the determination of the value of (future) accrued pension rights – eventually becoming pension benefits - is changed; (ii) the evolution of the pension after retirement is slower than average income (pension indexation below wage growth). It helps to offset the dependency effect in almost all countries, reflecting in many cases

reforms that have been introduced so as to make the public pension systems more robust to demographic changes. In the Czech Republic, Denmark, Ireland, Spain, France, Cyprus, Latvia, Lithuania, Luxembourg, Hungary, the Netherlands, Portugal, Sweden, the offsetting impact of the relative benefit reduction has increased compared with the previous 2006 projection and in particular for Hungary, Cyprus, Luxembourg, Sweden, Lithuania, Portugal and the Czech Republic. A common feature for some of these latter set of countries (Hungary, Portugal, the Czech Republic) is that they have introduced strong pension reforms since the completion of the 2006 Ageing Report. As a result, the overall increase in the public pension ratio is now projected to be considerably smaller.

Table 7 - Decomposition of the public pension/GDP ratio over 2007–50 in the 2006 and 2009 projections (in percentage points)

	Projection year	Dependency ratio	Coverage ratio	Employment rate	Benefit Ratio	Change 2007 - 2050 in %
BE	2006	7.7	-0.4	-0.9	-1.2	5.1
	2009	6.7	-0.7	-0.5	-0.6	4.8
BG	2006					
	2009	7.5	-2.2	-0.3	-1.8	2.5
CZ	2006	10.5	-3.5	-0.3	-0.6	5.6
	2009	8.3	-3.2	-0.5	-1.2	2.4
DK	2006	7.2	-2.8	-0.4	-0.5	3.2
	2009	6.2	-4.2	-0.2	-0.6	0.5
DE	2006	7.5	-0.6	-1.1	-3.5	1.9
	2009	7.3	-1.8	-0.7	-2.2	1.9
EE	2006	3.1	-1.5	-0.6	-3.8	-3.0
	2009	3.7	-1.3	-0.1	-2.3	-0.3
IE	2006	7.9	-1.4	-0.5	0.8	6.5
	2009	5.3	-1.4	-0.2	0.6	4.0
EL	2006					
	2009	12.7	-1.2	-0.7	1.8	12.3
ES	2006	12.4	-2.3	-1.8	-0.8	7.0
	2009	10.6	-1.0	-0.9	-1.1	7.0
FR	2006	8.7	-1.8	-0.9	-3.5	2.0
	2009	8.2	-2.1	-0.5	-3.8	1.2
IT	2006	11.5	-3.2	-2.0	-5.3	0.4
	2009	10.4	-3.3	-1.2	-4.2	0.7
CY	2006	10.2	1.2	-1.2	2.5	12.8
	2009	8.0	1.6	-0.5	0.2	9.2
LV	2006	3.4	-1.3	-0.7	-2.3	-0.9
	2009	4.3	-1.1	0.0	-2.6	0.4
LT	2006	5.4	-2.1	-1.0	-0.2	1.9
	2009	6.8	-1.4	0.1	-1.3	3.6
LU	2006	7.2	2.5	-4.4	2.1	7.4
	2009	7.6	4.9	0.0	0.6	13.4
HU	2006	10.5	-4.5	-1.1	2.0	6.4
	2009	9.5	-4.7	-0.7	-0.8	2.4
MT	2006	7.3	-1.0	-1.2	-5.0	-0.5
	2009	9.1	-2.8	-0.7	-0.2	4.8
NL	2006	6.3	-1.6	-0.2	-0.4	3.8
	2009	6.3	-1.5	-0.2	-0.5	3.7
AT	2006	11.3	-5.8	-1.3	-4.3	-1.0
	2009	9.3	-3.1	-0.5	-3.6	1.2
PL	2006	10.4	-5.7	-3.2	-6.3	-5.7
	2009	11.3	-5.7	-0.9	-5.6	-2.5
PT	2006	13.7	-0.9	-0.2	-3.0	9.3
	2009	9.4	-1.9	-0.7	-3.8	2.0
RO	2006					
	2009	10.6	-3.5	0.5	2.0	8.3
SI	2006	13.3	-3.6	-1.0	-0.9	7.3
	2009	12.9	-3.0	-0.1	-0.7	8.3
SK	2006	9.0	-2.5	-1.3	-3.1	1.5
	2009	9.6	-3.3	-0.4	-1.9	2.6
FI	2006	8.8	-3.1	-0.9	-0.8	3.3
	2009	7.9	-2.9	-0.6	-0.5	3.2
SE	2006	4.8	-0.2	-0.6	-2.8	0.9
	2009	4.6	-0.2	-0.4	-4.0	-0.5
UK	2006	4.7	0.0	-0.1	0.0	1.9
	2009	3.4	-1.5	-0.3	0.2	1.5
NO	2006					
	2009	7.4	-1.3	0.2	-1.7	4.5

Source: 2009 Ageing Report.
Note: Hungary reformed its pension system in 2009. According to the revised pension projections, public pension expenditure is projected to decrease by 0.4 p.p. of GDP between 2007 and 2060. The revised projection is not included in this table.

Annex 10: Fiscal sustainability challenges arising from ageing populations

Most recent assessment of long-term sustainability positions in EU Member States: sustainability indicators

The starting point for the long-term projections was the budgetary projection for 2009 of the Commission's spring 2009 forecasts (see the 2009 Sustainability Report). The S2 indicator is consistent with the concept of sustainability of public finances over an infinite horizon and is based on budgetary developments and on the most recent comparable information regarding the long-term impact of ageing populations on public expenditure.

Alongside the S2 indicator, the relative value of the S1 indicator is considered as it gives an indication of the urgency of any necessary reforms. Where the S1 indicator is markedly lower than the S2, the satiability constraints will materialise further in the future and therefore allows the Member State a bit more time to implement the necessary reforms without risking as large an impact on their government gross debt.

To make an overall assessment on the sustainability of public finances, other additional relevant factors are taken into account in order to better qualify the assessment with regard to where the main risks are likely to stem from and to consider the impact of relevant factors not (or not sufficiently) reflected in the sustainability indicators. Taking into account these other relevant factors may lead to a somehow different overall assessment than the one that would result from evaluating the sustainability indicators only.

The level of the outstanding government debt is arguably the most important additional factor. Indeed, while the sustainability indicators already include information on the current level of debt, they do not incorporate all the specific risks faced by countries with a large initial level of debt. First, high-debt countries are more sensitive to short/medium term shocks to economic growth and to interest rates changes. Second, a high level of debt may lead to higher interest rate than assumed in the projections and increase further the risks to public finance sustainability. Third, when calculating the sustainability indicators, it is assumed that all countries are able keep their primary balance as a share of GDP at its current level in the future. High-debt countries need to maintain large primary surpluses for a prolonged period of time in order to reduce their debt ratio. This may prove difficult in view of other competing budgetary pressures. This factor is used symmetrically as a risk-increasing factor for very high debt countries (notably Belgium, Greece, Italy and Hungary) and a risk-decreasing factor for very low debt countries (notably Bulgaria, Estonia, Luxembourg and Romania). A note of caution is added to assessments of France, Portugal and United Kingdom, where the difficulties of the economic and financial crisis seem likely to add to their sustainability risk through high resulting levels of debt.

A country's primary balance is also informative with regards to changes to its debt level. A negative primary balance is associated with a rising debt burden while a positive one with falling debt as a share of GDP. The Commission 2009 spring forecasts are used to look at the structural primary balance evolution over the years 2008 to 2010. The forecast deterioration of the structural primary balance, is seen as risk increasing factor for eleven Member States (Denmark, Germany, Ireland, Spain, Cyprus, Latvia, Netherlands, Slovenia, Finland, Sweden and United Kingdom), of which three (Denmark, Latvia and UK) have a particularly marked deterioration which should be flagged as a strong risk-increasing factor. In the case of Denmark, however, the deterioration comes from a very healthy starting position.

The analysis of contingent liabilities is an increasingly important part of the budgetary surveillance process regarding the medium-term budgetary developments, as their stock is non-negligible and may entail significant fiscal risks. However, as data are scarce and only available on explicit contingent liabilities and as the distinction between explicit and implicit liabilities is not so clear-cut economically a level of caution must be exercised when determining the relative risks of different countries.

The evolution of the benefit ratio is strongly driven by the pension system features and therefore by any reforms that have been enacted (see Chapter 2). A decrease in the public benefit ratio usually leads to a reduction (or slowdown) in government expenditure in pensions. However, it can also lead to other risks to public finances, if: (i) it leads to a substantial increase in the poverty rate of older people, which may require government assistance; (ii) moreover, the projected fall in the benefit ratio may be associated to a large increase in the relative share of social contributions that are diverted from social security or other public pension schemes to private schemes, which may affect public revenue. The sustainability indicators in Poland are clearly dependent on such a marked decrease in the benefit ratio that there is significant upward risk to the sustainability gap from political pressure. For Austria, Portugal and Sweden the decrease is also an additional risk. Conversely, the high and increasing benefit ratio for Greece must be seen an indication of the types of reforms that are necessary in the country to address its very large sustainability gap.

The assessment is made fundamentally on the basis of a central demographic and macroeconomic scenario, which is further discussed in the Ageing report. However, sensitivity tests provide information on the robustness of the results with respect to changes in some key parameters. Also, different assumptions concerning the main drivers of expenditure can have a large impact on the size of the increase in age-related expenditures, for example concerning the income elasticity for health-care. There is therefore some uncertainty regarding the size of the sustainability challenge that EU countries are facing. Sensitivity tests illustrate the possible impact of different uncertainties materialising.

A high current tax ratio leaves limited room of manoeuvre for using tax increases to finance additional public expenditure as compared to a lower tax ratio. This is the case for Belgium, Denmark, Italy and Sweden, with Belgium combining a high tax ratio with a need to reduce its very high debt. By contrast, low tax ratios are not considered to be a risk-reducing factor, since a possible decision regarding an increase of the tax ratio would not only take into account the financing needs resulting from ageing but would depend on the size of public procurement of good and services, the effectiveness of tax systems, the structure of the tax system and its impact on growth.

Table 8 presents an assessment of the long-term risks associated with the S2 indicator and lists the main additional factors that are taken into account when reaching an overall assessment for the 27 Member States. The relationship between the overall classification and the S2 indicator is shown in Figure 23 which indicates that in general, the synthetic S2 indicator summarises the overall degree of long-term risks well. Specifically, the overall assessment is different from an assessment that would be based solely on the value of the S2 indicator in the main scenario in a few cases, namely: Both Italy and Hungary are deemed to be at medium long-term risk despite a low S2 indicator due mainly to their very high debt and in the case of Italy also to its high tax ratio. Despite a very large sustainability gap, Luxembourg is assessed as being at medium long-term risk due to its low level of debt, the large level of assets and the significantly lower S1 indicator which allows it some more time to correct its gap than would be the case with a higher S1.

Table 8 – Main factors considered in reaching an overall assessment of the public finance sustainability risks

	S2 indicator Baseline	Level of debt 2009	Change in the structural primary balance 2008 - 2010	tax ratio	Difference between the S1 and S2 indicators	Benefit ratio %change	Overall assessment
BE	medium	very high		–			medium
BG	low	very low					low
CZ	high	low					high
DK	low	low	– –	–			low
DE	medium	high	–				medium
EE	low	very low					low
IE	high	high	–				high
EL	high	very high					high
ES	high	medium	–				high
FR	medium	high					medium
IT	low	very high		–			medium
CY	high	medium	–		+		high
LV	high	low	– –				high
LT	high	low					high
LU	high	very low			+		medium
HU	low	very high					medium
MT	high	high					high
NL	high	medium	–				high
AT	medium	high				–	medium
PL	medium	medium				–	medium
PT	medium	high				–	medium
RO	high	very low					high
SI	high	low	–				high
SK	high	low					high
FI	medium	low	–				low
SE	low	medium	–	–		–	low
UK	high	high	– –				high

Source: Commission services.

Note: Note: '-' factor tends to increase the risk to long-term sustainability, '+' factor tends to decrease the risk to long-term sustainability.

Finland is assessed to be low long-term risk, though the projected increase on age-related expenditure is substantial and the fiscal cost of the crisis has been large. However, the large stock of financial assets in the government's portfolio (above 100 percent of GDP) provides a cushion to absorb the crisis-related deterioration in government accounts.

It should be noted that countries with different characteristics can overall face a similar degree of risks to fiscal sustainability. For example, the projected cost of ageing in BE is high while the budgetary position is relatively sound, with a small structural primary deficit and a very high level of government debt. By contrast, PL, which is in the same medium long-term risk category, has a projected cost of ageing which marginally improves its long-term sustainability while its sustainability difficulties arise from its weak budgetary position. Despite having the same classification and S2 gaps within 2 percentage points of GDP of each other, the priorities are different; PL needs to consolidate its public finances once the upswing is underway and the time is right, while BE might consider appropriate introducing measures to curb the projected high increase in age-related expenditure.

An overall assessment of risks to the long-term sustainability of public finances is given in the following section for the 27 Member States.

Figure 20 – Overall risk classification and the sustainability gaps (S2 and S1 in the baseline scenario)

Assessment
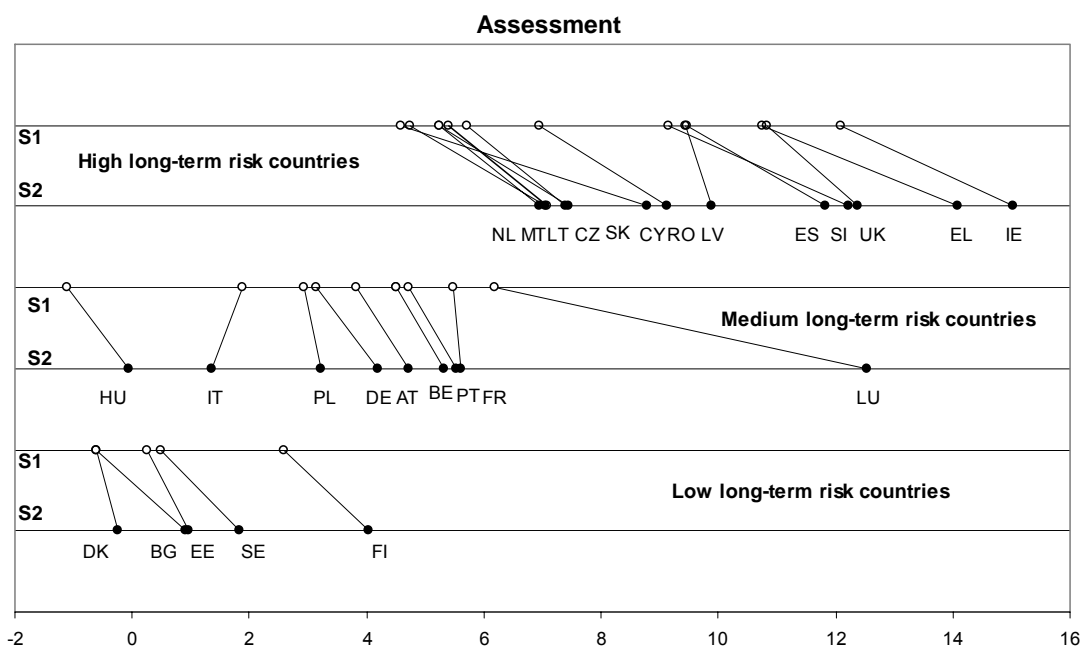
Source: Commission services

The budgetary impact of ageing populations is a concern for the sustainability of public finances in all EU Member States. There is however a large variation in the degree of risks that they are facing and where they mainly come from. This section summarises the different risks that the EU Member States are facing with regard to the long-term sustainability of the public finances. Overall, thirteen countries are assessed to be at high risk, nine at medium risk and five at low risk. Compared with the results of the 2006 Sustainability Report, ten Member States are in a higher risk category, while two are in lower risk group.

Low long-term risk countries

Bulgaria, Denmark, Estonia, Finland, Sweden have in general come furthest in coping with ageing, which implies a strong budgetary position (running large surpluses prior to the crisis, reducing debt and/or accumulating assets) and/or comprehensive pension reforms, sometimes including a shift towards private funded pension schemes, and present therefore a low long-term risk.

Of these countries, Finland has an above average projected increase in age-related expenditure over the long-term. Although, the large stock of public financial assets provides a buffer against the negative budgetary impacts of the crisis.

For Bulgaria, Denmark, Estonia and Sweden the forecast increases in age-related expenditure are amongst the lowest in EU and their budgetary positions are either in or close to surplus. This does not mean that in these countries there are no risks regarding the long-term sustainability of public finances however, but that their social protection systems (pension and healthcare) at present appear able to deal with the pressures of an ageing population on current estimates. In particular, in case of Bulgaria and Estonia, a positive impact of low debt level and implemented pension reforms should be seen in the context of the ongoing convergence to the levels observed in the rest of EU.

Medium long-term risk countries

The intermediate group of countries (Belgium, Germany, France, Italy, Luxembourg, Hungary, Austria, Poland and Portugal) consists of Member States with very different characteristics but three distinct categories can be distinguished:

Belgium, Germany, Austria are countries with a significant cost of ageing and where measures might be needed to curb these costs, but which currently have relatively strong budgetary positions. For these countries, reforms to address the rising cost of ageing are a priority and these can be undertaken without waiting for the end of the financial crisis, insofar as the reforms do not adversely affect the recovery. This is also the case for Luxembourg which faces the highest increase in age-related expenditure of all EU countries, but which is included in the medium long-term risk category due to its low level of debt, high stock of assets and lower ageing costs at the beginning of the period as shown by its lower S1 indicator. For Belgium, the strong budgetary position in recent years is counterweighted by very high levels of debt ratio-to-GDP which is forecast to reach 100% by 2010. Nevertheless, Belgium is assessed to present medium long-term risk because of its track record of running consistently high primary surpluses over time and reduce its debt when the economy is not in crisis.

France, Poland, and Portugal are countries that need to consolidate, though to different degrees, their public finances over the medium-term but for which the costs of ageing are relatively less of a concern, usually as a result of reforms made to their pension systems. It may be that the government accounts improve when the recovery comes, but where this is not the case budgetary consolidation will be necessary and should be undertaken as soon as the time is right in order to reduce risks to public finance sustainability. In Poland's and Portugal's cases, there is an added risk in relation to the sharp reduction in the benefit ratio.

For Italy and Hungary neither the budgetary position nor the long term cost of ageing are particularly high. However the initial levels of debt give cause for concern. In both Italy and Hungary, rapid budgetary consolidation is required to ensure a steady reduction of the currently very high level of debt, although it will need to be undertaken at a time when it does not adversely affect the recovery from the economic and financial crisis.

High long-term risk countries

This category of countries (Czech Republic, Ireland, Greece, Spain, Cyprus, Latvia, Lithuania, Malta, Netherlands, Romania, Slovenia, Slovakia and United Kingdom) are characterised by a very significant rise in age-related expenditure over the long-term, underlining that measures aimed at curbing them will prove necessary. Of these, Latvia is the exception, where age-related expenditure is forecast to be just 1.3 percentage points (p.p.) of GDP higher in 2060 compared with 2010. For Greece and Slovenia (as well as Luxembourg) the increase in these expenditures is over 10 p.p. of GDP.

Conversely, Romania is characterised by very low levels of debt which stand at below 20% of GDP, while for Czech Republic, Latvia, Lithuania, Slovenia and Slovakia debt ratios stand at below 40%. At the other end of the spectrum, Greece has a government dent of nearly 100% of GDP, which is combined with one of the highest increases in age-related expenditure grouping the whole EU. Latvia, while characterised by very low debt levels, is forecast to have a very large increase in debt by 2010.

For most of the Member States in this high long-term risk category it will be necessary to address both the long-term costs of ageing through reforms to pension systems and the weakness of the initial budgetary positions. For some Member States the deficits may return to surplus when the recovery comes, but where this is not the case budgetary consolidation will be necessary and should be undertaken as soon as the time is right in order to reduce risks to public finance sustainability.

Conversely, the reforms to the pension and healthcare system which will not adversely affect the recovery of the Member States' economies should be approached with urgency. This is

particularly the case for countries where age related expenditure is a significant challange: Ireland, Greece, Spain, Cyprus, Malta, Netherlands, Romania and Slovenia. As not all pension and healthcare reforms are neutral with respect to the recovery, care should be taken to consider the effect of any changes undertaken.

Within the high long-term risk countries, the case of Cyprus should also be noted. Thanks to successful consolidation in the pre-crisis years, Cyprus managed to significantly reduce its debt ratio. Moreover, although the planned increases in age-related expenditure is very large, its demographic projections are such that the increase in ageing-related expenditure will be relatively contained in the first half of the projection horizon.

Changes in sustainability positions in the last decade

The results in this report differ significantly from those presented three years ago in the 2006 Sustainability Report. While the EU-25 average sustainability gap was estimated 3.4% of GDP on S2, the current estimates are for 6.5% of GDP.

Figure 21 compares the S2 indicator calculated in this report with the one of 2006. The difference between S2 in the 2006 and 2009 reports is split in three components: (i) the difference that is due to changes in the initial budgetary position, (ii) the difference that owes to the revision in the long-term projection of age-related expenditure because of new demographic projections and a number of improvements in the projection methods, and (iii) the fact that the long-term projections have been extended from 2050 to 2060.

On average, the sustainability gap has increased by 3.1 percentage points (p.p.) of GDP for the 25 countries that were members of the EU in 2006. While 4 Member States (Hungary, Portugal, Italy and Germany) show a lower sustainability gap than in the 2006 exercise, the remaining 21 Member States show a deterioration. Of these, in all cases expect Luxembourg, Greece and Malta, the deterioration is essentially due to a weakening of the initial budgetary position rather than to an increase in the age-related costs and the delay in the required adjustment that leads to a higher LTC. For Ireland, Spain, Latvia and UK the weakened initial budgetary position is responsible for an increase of the estimated sustainability gap of over 5 points.

Overall, for the EU-25 countries, the deterioration in S2 is due to the worsening in the starting budgetary position. The required adjustment given the starting position has increase by 3.2 p.p. of GDP between the 2006 and 2009 reports, as the base year for the analysis changed from 2005 to 2009. The fiscal impact of the economic and financial crisis is therefore included in the 2009 estimates and explains the worse initial budgetary position.

Conversely, there has been a slight improvement by 0.1 p.p. of GDP in the LTC component of S2. Almost half of Member States show an improvement on this component. Notable outliers are Luxembourg, Malta and Greece where changes in the estimate of the LTC are equal to 3.6, 4.6 and 9.9 points, respectively. In Greece's case, this is largely explained by the fact that the 2006 estimates did not include pension expenditure as projections were not available at that time. For Luxembourg, the required adjustment given the long-term costs (LTC) now takes into account the pension expenditure that should be paid out to non-residents, while in 2006 this was omitted.

Figure 21 – LTC component of the S2 indicator until 2050 and 2060
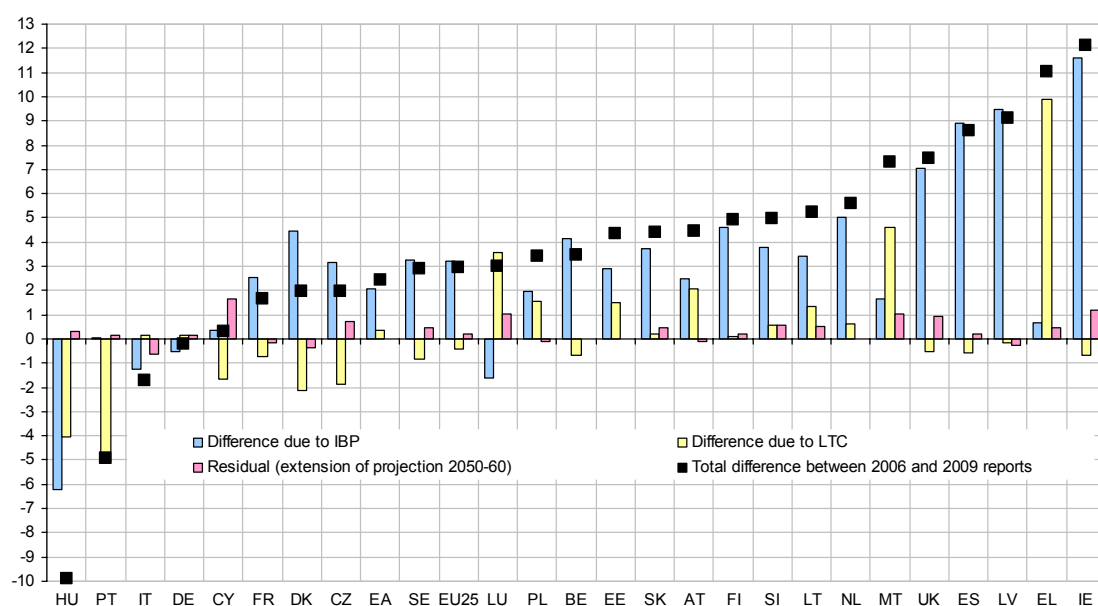
Source: Commission services

Table 9 –S2 indicator in the baseline scenario compared to the results of the 2006 Sustainability Report

	LTC		Difference in LTC	S2
	until 2050	until 2060	2050 - 2060	until 2060
BE	4.6	4.8	0.1	5.3
BG	1.1	1.5	0.4	0.9
CZ	2.9	3.7	0.8	7.4
DK	1.8	1.4	-0.4	-0.2
DE	3.0	3.3	0.3	4.2
EE	-0.2	-0.1	0.0	1.0
IE	5.3	6.7	1.4	15.0
EL	10.8	11.5	0.7	14.1
ES	5.4	5.7	0.4	11.8
FR	1.9	1.8	-0.1	5.6
IT	1.9	1.5	-0.5	1.4
CY	6.6	8.3	1.6	8.8
LV	1.0	1.0	0.0	9.9
LT	2.6	3.2	0.6	7.1
LU	11.9	12.9	1.0	12.5
HU	1.0	1.5	0.5	-0.1
MT	4.5	5.7	1.2	7.0
NL	5.0	5.0	0.0	6.9
AT	3.1	3.1	0.0	4.7
PL	-1.3	-1.2	0.0	3.2
PT	1.6	1.9	0.3	5.5
RO	4.4	4.9	0.5	9.1
SI	7.7	8.3	0.7	12.2
SK	2.3	2.9	0.6	7.4
FI	4.3	4.5	0.2	4.0
SE	1.2	1.6	0.4	1.8
UK	2.6	3.6	0.9	12.4
EU27	2.9	3.2	0.3	6.5
EA	3.4	3.5	0.1	5.8

Source: Commission services.

Table 9 shows the LTC component of the S2 indicator calculated until 2050 and 2060, as well as the difference between the two and the S2 sustainability gap. It aims to complement the analysis presented in Figure 24 by showing the evolution of the LTC due to the increase in expenditure in the years after 2050. The figures show that on average there is little difference between the LTC until 2050 and until 2060. For EU-27 the difference equals 0.3 points on average, while for the Euro Area, the difference is 0.1 p.p. of GDP. Little of the difference between the results presented in this report and those presented in the 2006 Sustainability Report can therefore be attributed to the additional costs of ageing beyond 2050. However, it suggests that, on the basis of current projections, the ratio-to-GDP of age-related expenditure will keep increasing beyond 2060 for most. However, it should be noted that the relationship

between the cost of ageing and the LTC depends on the discount rates and the time profile of the spending increases. For individual Member States, however, there is more variation with some such as Ireland, Cyprus and Malta having a significant increase in their sustainability gap due to the effect of the additional costs of ageing beyond 2050.

Annex 11: Methodological issues and the Aggregate Replacement Ratio

The focus of this indicator is on "the transition in income status of the individual" arising from working to retirement. Consequently, it refers to specific individual income components that, by definition, are recorded as gross components in EU-SILC. Those countries currently unable to supply the relevant gross income components provide results based on the corresponding net income components. From the 2007 data collection onwards, this indicator is calculated on the basis of gross income in all countries. For the relevant countries, this transition from net to gross is marked as a break in series.

Equivalisation is not performed on gross income, because it is inappropriate.

Compared to the median relative income ratio, the aggregate replacement ratio, is more narrow in scope. This applies both to the income concept as to the age groups that are considered. In the calculation of the aggregate replacement ratio, income of elderly is restricted to pensions; income of the younger age group is limited to earnings. For the median relative income ratio, all sources of income are considered.

Moreover, the median relative income ratio considers two broad age groups (0 to 64 compared to population aged 65 or over), whereas the aggregate replacement ratio focuses on the population aged 65 -74 for the elderly and the population aged 50-59 for the younger age group.

Gender differences in the aggregate replacement ratio need to be interpreted carefully, particularly in relation to earnings of women aged 50-59. For example, if the female aggregate replacement ratio is higher than for males, this does not necessarily refer to a pension policy issue.

The aggregate replacement ratio is a crude measure of comparison of the pension income of individuals in the upper age group and the income from work of persons in the lower age group. Deliberately, no account is taken of other income sources like investment income or social transfers between households.

This aggregate calculation does compare the situation of the same individuals before and after the cut-off age. Moreover, as this calculation is done using non-equivalised income, no account is taken of differences in household composition or size, which may affect the adequacy of the income.

Annex 12: European Commission spring 2010 forecast - main variables

Table 10 – GDP growth, EU Member States

SPRING 2010 FORECASTS

MAIN ECONOMIC INDICATORS 1992 - 2011

(a) GDP at constant prices (annual % change)

	5-year averages							Estimates	Forecasts	Scenario unchanged policies	
	1992-96	1997-01	2002-06	2005	2006	2007	2008	2009	2010	2011	
BE	1,5	2,7	2,0	1,8	2,8	2,9	1,0	-3,1	1,3	1,6	BE
DE	1,4	2,1	1,0	0,8	3,2	2,5	1,3	-5,0	1,2	1,6	DE
IE	5,9	9,1	5,4	6,2	5,4	6,0	-3,0	-7,1	-0,9	3,0	IE
EL	1,1	3,8	4,1	2,2	4,5	4,5	2,0	-2,0	-3,0	-0,5	EL
ES	1,5	4,4	3,3	3,6	4,0	3,6	0,9	-3,6	-0,4	0,8	ES
FR	1,2	3,0	1,7	1,9	2,2	2,3	0,4	-2,2	1,3	1,5	FR
IT	1,2	2,0	0,9	0,7	2,0	1,5	-1,3	-5,0	0,8	1,4	IT
CY	5,5	4,2	3,3	3,9	4,1	5,1	3,6	-1,7	-0,4	1,3	CY
LU	2,6	6,3	4,2	5,4	5,6	6,5	0,0	-3,4	2,0	2,4	LU
MT	5,0	3,4	2,1	3,9	3,6	3,8	2,1	-1,9	1,1	1,7	MT
NL	2,5	3,7	1,6	2,0	3,4	3,6	2,0	-4,0	1,3	1,8	NL
AT	1,8	2,6	2,2	2,5	3,5	3,5	2,0	-3,6	1,3	1,6	AT
PT	2,0	3,8	0,7	0,9	1,4	1,9	0,0	-2,7	0,5	0,7	PT
SI	2,0	4,2	4,3	4,5	5,8	6,8	3,5	-7,8	1,1	1,8	SI
SK	-	2,7	5,9	6,7	8,5	10,6	6,2	-4,7	2,7	3,6	SK
FI	1,3	4,5	3,0	2,9	4,4	4,9	1,2	-7,8	1,4	2,1	FI
€ area	1,5	2,8	1,7	1,7	3,0	2,8	0,6	-4,1	0,9	1,5	€ area
BG	-2,8	2,0	5,7	6,2	6,3	6,2	6,0	-5,0	0,0	2,7	BG
CZ	2,3	1,2	4,6	6,3	6,8	6,1	2,5	-4,2	1,6	2,4	CZ
DK	2,6	2,4	1,8	2,4	3,4	1,7	-0,9	-4,9	1,6	1,8	DK
EE	-	7,0	8,4	9,4	10,0	7,2	-3,6	-14,1	0,9	3,8	EE
LV	-8,8	6,3	9,0	10,6	12,2	10,0	-4,6	-18,0	-3,5	3,3	LV
LT	-8,3	4,7	8,0	7,8	7,8	9,8	2,8	-15,0	-0,6	3,2	LT
HU	0,6	4,6	4,2	3,5	4,0	1,0	0,6	-6,3	0,0	2,8	HU
PL	4,9	4,4	4,1	3,6	6,2	6,8	5,0	1,7	2,7	3,3	PL
RO	1,4	-0,9	6,2	4,2	7,9	6,3	7,3	-7,1	0,8	3,5	RO
SE	1,2	3,3	3,2	3,3	4,2	2,5	-0,2	-4,9	1,8	2,5	SE
UK	2,5	3,4	2,6	2,2	2,9	2,6	0,5	-4,9	1,2	2,1	UK
EU	1,4	2,9	2,0	2,0	3,2	2,9	0,7	-4,2	1,0	1,7	EU
US	3,3	3,8	2,7	3,1	2,7	2,1	0,4	-2,4	2,8	2,5	US
JP	1,3	0,5	1,7	1,9	2,0	2,4	-1,2	-5,2	2,1	1,5	JP

Source: Commission services

Table 11 – Labour market developments, EU Member States

MAIN ECONOMIC INDICATORS 1992 - 2011

(c) Total employment (annual % change)

	5-year averages		2002-06	2005	2006	2007	2008	Estimates 2009	Forecasts 2010	Scenario unchanged policies 2011	
	1992-96	1997-01									
BE	0,1	1,4	0,7	1,4	1,2	1,6	1,9	-0,5	-0,9	0,2	BE
DE	-1,4	0,0	-0,7	-0,6	0,2	1,5	1,4	0,0	-0,3	-0,1	DE
IE	2,5	5,6	3,2	4,9	4,3	3,7	-1,1	-8,2	-3,5	0,4	IE
EL	0,9	0,7	1,7	0,9	2,0	1,4	0,1	-1,2	-1,9	-0,8	EL
ES	-0,3	4,1	2,8	3,2	3,3	2,8	-0,6	-6,7	-2,5	-0,1	ES
FR	-0,5	1,7	0,5	0,6	1,0	1,5	0,6	-1,3	-0,7	0,3	FR
IT	-0,9	1,1	0,8	0,2	1,5	1,0	-0,1	-2,7	-0,7	0,4	IT
CY	-	1,6	3,0	3,6	1,8	3,2	2,6	-0,7	-0,7	-0,2	CY
LU	2,5	4,7	2,8	2,9	3,6	4,4	4,7	0,9	0,0	0,7	LU
MT	1,5	0,8	0,7	1,5	1,3	3,2	2,5	-0,6	0,3	0,7	MT
NL	1,0	2,4	-0,2	0,0	1,6	2,3	1,2	-0,9	-1,6	-0,2	NL
AT	0,0	0,8	0,5	1,2	1,0	1,6	1,8	-0,9	-0,1	0,2	AT
PT	-0,8	2,1	0,0	-0,3	0,5	0,0	0,4	-2,5	-0,5	0,0	PT
SI	-	0,2	0,5	-0,2	1,5	3,0	2,8	-2,2	-2,3	-0,5	SI
SK	-	-1,1	0,9	1,4	2,3	2,1	2,8	-2,4	-1,9	1,2	SK
FI	-2,3	2,2	0,9	1,4	1,8	2,2	1,6	-3,0	-2,1	0,4	FI
€ area	-0,6	1,4	0,6	0,7	1,4	1,4	0,6	-2,1	-1,0	0,1	€ area
BG	0,3	-2,3	2,4	2,7	3,3	2,8	3,3	-2,9	-1,2	0,6	BG
CZ	-	-0,9	0,5	1,0	1,9	2,7	1,2	-1,2	-1,9	0,4	CZ
DK	0,1	1,0	0,3	1,0	2,1	2,9	1,4	-3,6	-1,9	-0,1	DK
EE	-5,2	-1,4	2,0	2,0	5,4	0,8	0,2	-9,9	-2,6	1,5	EE
LV	-7,4	0,0	2,5	1,6	4,9	3,6	0,9	-13,6	-7,2	0,8	LV
LT	-2,7	-2,1	2,0	2,5	1,8	2,8	-0,5	-6,9	-3,6	0,2	LT
HU	-	3,3	-0,2	-0,2	0,6	-0,3	-1,3	-3,6	-0,9	0,8	HU
PL	-	-1,1	0,5	2,2	3,2	4,4	3,8	0,4	0,0	0,6	PL
RO	-2,8	-2,5	-2,6	-1,5	0,7	0,4	-0,2	-1,0	-1,7	0,8	RO
SE	-1,9	1,4	0,1	0,3	1,7	2,2	0,9	-2,0	-0,9	0,3	SE
UK	0,0	1,2	0,9	1,0	0,9	0,7	0,7	-1,6	-0,3	0,7	UK
EU	-	0,8	0,5	0,8	1,5	1,7	0,9	-2,0	-0,9	0,3	EU
US	1,8	1,7	0,6	1,3	2,1	1,1	-0,5	-3,8	-0,4	0,6	US
JP	0,4	-0,6	-0,2	0,4	0,4	0,4	-0,3	-1,6	-1,0	-0,2	JP

(d) Number of unemployed (as % of the labour force)

	5-year averages		2002-06	2005	2006	2007	2008	Estimates 2009	Forecasts 2010	Scenario unchanged policies 2011	
	1992-96	1997-01									
BE	8,9	8,1	8,2	8,5	8,3	7,5	7,0	7,9	8,8	9,0	BE
DE	7,8	8,4	9,6	10,7	9,8	8,4	7,3	7,5	7,8	7,8	DE
IE	13,9	6,2	4,5	4,4	4,5	4,6	6,3	11,9	13,8	13,4	IE
EL	8,8	10,9	9,9	9,9	8,9	8,3	7,7	9,5	11,8	13,2	EL
ES	17,8	13,1	10,1	9,2	8,5	8,3	11,3	18,0	19,7	19,8	ES
FR	11,0	10,0	9,1	9,3	9,2	8,4	7,8	9,5	10,2	10,1	FR
IT	10,3	10,5	7,9	7,7	6,8	6,1	6,7	7,8	8,8	8,8	IT
CY	-	3,8	4,5	5,3	4,6	4,0	3,6	5,3	6,7	7,0	CY
LU	2,7	2,4	4,1	4,6	4,6	4,2	4,9	5,4	6,1	6,4	LU
MT	5,2	6,8	7,4	7,2	7,1	6,4	5,9	6,9	7,3	7,2	MT
NL	6,2	3,4	3,9	4,7	3,9	3,2	2,8	3,4	4,9	5,2	NL
AT	3,9	4,0	4,7	5,2	4,8	4,4	3,8	4,8	5,1	5,4	AT
PT	6,2	4,9	6,7	7,7	7,8	8,1	7,7	9,6	9,9	9,9	PT
SI	-	6,9	6,4	6,5	6,0	4,9	4,4	5,9	7,0	7,3	SI
SK	-	15,8	16,8	16,3	13,4	11,1	9,5	12,0	14,1	13,3	SK
FI	14,9	10,6	8,6	8,4	7,7	6,9	6,4	8,2	9,5	9,2	FI
€ area	10,2	9,3	8,7	9,0	8,3	7,5	7,5	9,4	10,3	10,4	€ area
BG	13,8	15,7	12,6	10,1	9,0	6,9	5,6	6,8	7,9	7,3	BG
CZ	-	7,3	7,7	7,9	7,2	5,3	4,4	6,7	8,3	8,0	CZ
DK	7,8	4,8	4,8	4,8	3,9	3,8	3,3	6,0	6,9	6,5	DK
EE	-	11,3	8,8	7,9	5,9	4,7	5,5	13,8	15,8	14,6	EE
LV	13,8	14,0	9,8	8,9	6,8	6,0	7,5	17,1	20,6	18,8	LV
LT	5,0	13,3	10,3	8,3	5,6	4,3	5,8	13,7	16,7	16,3	LT
HU	-	7,3	6,5	7,2	7,5	7,4	7,8	10,0	10,8	10,1	HU
PL	13,4	13,8	18,1	17,8	13,9	9,6	7,1	8,2	9,2	9,4	PL
RO	5,8	6,4	7,6	7,2	7,3	6,4	5,8	6,9	8,5	7,9	RO
SE	8,5	7,2	7,0	7,7	7,0	6,1	6,2	8,3	9,2	8,8	SE
UK	9,1	5,8	5,0	4,8	5,4	5,3	5,6	7,6	7,8	7,4	UK
EU	-	8,8	8,8	8,9	8,2	7,1	7,0	8,9	9,8	9,7	EU
US	6,3	4,5	5,4	5,1	4,6	4,6	5,8	9,3	9,7	9,8	US
JP	2,8	4,4	4,8	4,4	4,1	3,9	4,0	5,1	5,3	5,3	JP

Note : - As usual, the forecasts are conditioned upon, inter alia, the technical assumption of 'no policy change'.
This means that specific policy measures, especially in the budgetary field, which have not yet been disclosed are not taken
into account. As a result, projections for 2011 are essentially an extrapolation of present trends.

Source: Commission services

Table 12 – Public finances, EU Member States

SPRING 2010 FORECASTS

MAIN ECONOMIC INDICATORS 1992 - 2011

(g) General government net lending (+) or borrowing (-) (as a % of GDP) (1)

	5-year averages		2002-06	2005	2006	2007	2008	Estimates 2009	Forecasts 2010	Scenario unchanged policies 2011	
	1992-96	1997-01									
BE	-5,4	-0,7	-0,6	-2,7	0,3	-0,2	-1,2	-6,0	-5,0	-5,0	BE
DE	-3,0	-1,6	-3,3	-3,3	-1,6	0,2	0,0	-3,3	-5,0	-4,7	DE
IE	-1,7	2,4	1,2	1,6	3,0	0,1	-7,3	-14,3	-11,7	-12,1	IE
EL	-9,6	-4,2	-5,3	-5,2	-3,6	-5,1	-7,7	-13,6	-9,3	-9,9	EL
ES	-5,6	-1,9	0,4	1,0	2,0	1,9	-4,1	-11,2	-9,8	-8,8	ES
FR	-4,9	-2,1	-3,2	-2,9	-2,3	-2,7	-3,3	-7,5	-8,0	-7,4	FR
IT	-8,3	-2,2	-3,5	-4,3	-3,3	-1,5	-2,7	-5,3	-5,3	-5,0	IT
CY	-	-3,6	-3,7	-2,4	-1,2	3,4	0,9	-6,1	-7,1	-7,7	CY
LU	1,6	4,5	0,6	0,0	1,4	3,6	2,9	-0,7	-3,5	-3,9	LU
MT	-	-7,6	-5,1	-2,9	-2,6	-2,2	-4,5	-3,8	-4,3	-3,6	MT
NL	-3,3	0,0	-1,3	-0,3	0,5	0,2	0,7	-5,3	-6,3	-5,1	NL
AT	-4,1	-1,6	-1,9	-1,7	-1,5	-0,4	-0,4	-3,4	-4,7	-4,6	AT
PT	-4,7	-3,4	-3,8	-6,1	-3,9	-2,6	-2,8	-9,4	-8,5	-7,9	PT
SI	-	-3,1	-2,0	-1,4	-1,3	0,0	-1,7	-5,5	-6,1	-5,2	SI
SK	-	-7,6	-3,9	-2,8	-3,5	-1,9	-2,3	-6,8	-6,0	-5,4	SK
FI	-5,8	2,7	3,1	2,7	4,0	5,2	4,2	-2,2	-3,8	-2,9	FI
€ area	-5,0	-2,5	-2,5	-2,5	-1,3	-0,6	-2,0	-6,3	-6,6	-6,1	€ area
BG	-	1,4	1,1	1,9	3,0	0,1	1,8	-3,9	-2,8	-2,2	BG
CZ	-	-4,4	-4,5	-3,6	-2,6	-0,7	-2,7	-5,9	-5,7	-5,7	CZ
DK	-2,5	0,9	2,6	5,2	5,2	4,8	3,4	-2,7	-5,5	-4,9	DK
EE	-	-0,5	1,5	1,6	2,5	2,6	-2,7	-1,7	-2,4	-2,4	EE
LV	-	-1,5	-1,2	-0,4	-0,5	-0,3	-4,1	-9,0	-8,6	-9,9	LV
LT	-	-4,9	-1,1	-0,5	-0,4	-1,0	-3,3	-8,9	-8,4	-8,5	LT
HU	-	-5,3	-8,0	-7,9	-9,3	-5,0	-3,8	-4,0	-4,1	-4,0	HU
PL	-	-3,9	-4,9	-4,1	-3,6	-1,9	-3,7	-7,1	-7,3	-7,0	PL
RO	-	-4,0	-1,6	-1,2	-2,2	-2,5	-5,4	-8,3	-8,0	-7,4	RO
SE	-7,7	1,2	0,7	2,3	2,5	3,8	2,5	-0,5	-2,1	-1,6	SE
UK	-6,1	0,5	-3,0	-3,4	-2,7	-2,8	-4,9	-11,5	-12,0	-10,0	UK
EU	-	-1,4	-2,5	-2,5	-1,4	-0,8	-2,3	-6,8	-7,2	-6,5	EU
US	-4,2	0,3	-3,7	-3,2	-2,0	-2,7	-6,4	-11,0	-10,0	-9,9	US
JP	-2,5	-7,3	-6,1	-6,7	-1,6	-2,5	-2,0	-6,9	-6,7	-6,6	JP

(1) The net lending (borrowing) includes in 2000-2005 one-off proceeds relative to UMTS licences.

(h) General government gross debt (as a % of GDP)

	2002	2003	2004	2005	2006	2007	2008	Estimates 2009	Forecasts 2010	Scenario unchanged policies 2011	
BE	103,5	98,5	94,2	92,1	88,1	84,2	89,8	96,7	99,0	100,9	BE
DE	60,4	63,9	65,7	68,0	67,6	65,0	66,0	73,2	78,8	81,6	DE
IE	32,2	31,0	29,7	27,6	24,9	25,0	43,9	64,0	77,3	87,3	IE
EL	101,7	97,4	98,6	100,0	97,8	95,7	99,2	115,1	124,9	133,9	EL
ES	52,5	48,7	46,2	43,0	39,6	36,2	39,7	53,2	64,9	72,5	ES
FR	58,8	62,9	64,9	66,4	63,7	63,8	67,5	77,6	83,6	88,6	FR
IT	105,7	104,4	103,8	105,8	106,5	103,5	106,1	115,8	118,2	118,9	IT
CY	64,6	68,9	70,2	69,1	64,6	58,3	48,4	56,2	62,3	67,6	CY
LU	6,3	6,1	6,3	6,1	6,5	6,7	13,7	14,5	19,0	23,6	LU
MT	60,1	69,3	72,3	70,1	63,7	61,9	63,7	69,1	71,5	72,5	MT
NL	50,5	52,0	52,4	51,8	47,4	45,5	58,2	60,9	66,3	69,6	NL
AT	66,5	65,5	64,8	63,9	62,2	59,5	62,6	66,5	70,2	72,9	AT
PT	55,6	56,9	58,3	63,6	64,7	63,6	66,3	76,8	85,8	91,1	PT
SI	28,0	27,5	27,2	27,0	26,7	23,4	22,6	35,9	41,6	45,4	SI
SK	43,4	42,4	41,5	34,2	30,5	29,3	27,7	35,7	40,8	44,0	SK
FI	41,5	44,5	44,4	41,7	39,7	35,2	34,2	44,0	50,5	54,9	FI
€ area	68,0	69,1	69,5	70,1	68,3	66,0	69,4	78,7	84,7	88,5	€ area
BG	53,6	45,9	37,9	29,2	22,7	18,2	14,1	14,8	17,4	18,8	BG
CZ	28,2	29,8	30,1	29,7	29,4	29,0	30,0	35,4	39,8	43,5	CZ
DK	48,3	45,8	44,5	37,1	32,1	27,4	34,2	41,6	46,0	49,5	DK
EE	5,7	5,6	5,0	4,6	4,5	3,8	4,6	7,2	9,6	12,4	EE
LV	13,5	14,6	14,9	12,4	10,7	9,0	19,5	36,1	48,5	57,3	LV
LT	22,3	21,1	19,4	18,4	18,0	16,9	15,6	29,3	38,6	45,4	LT
HU	55,6	58,4	59,1	61,8	65,6	65,9	72,9	78,3	78,9	77,8	HU
PL	42,2	47,1	45,7	47,1	47,7	45,0	47,2	51,0	53,9	59,3	PL
RO	24,9	21,5	18,7	15,8	12,4	12,6	13,3	23,7	30,5	35,8	RO
SE	52,6	52,3	51,1	50,8	45,7	40,8	38,3	42,3	42,6	42,1	SE
UK	37,5	38,7	40,6	42,2	43,5	44,7	52,0	68,1	79,1	86,9	UK
EU	60,4	61,8	62,2	62,7	61,4	58,8	61,6	73,6	79,6	83,8	EU

Note : - As usual, the forecasts are conditioned upon, inter alia, the technical assumption of 'no policy change'.
This means that specific policy measures, especially in the budgetary field, which have not yet been disclosed are not taken
into account. As a result, projections for 2011 are essentially an extrapolation of present trends.

Source: Commission services

Figure 22 – General government finances, EU
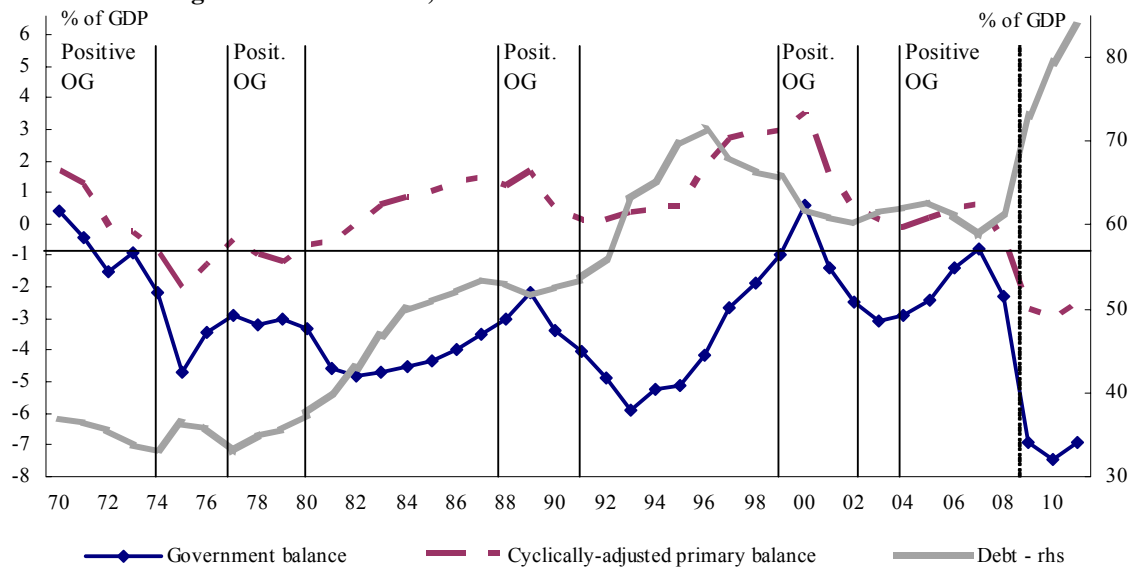
Note: EU-11 from 1970 to 1977: Belgium, Ireland, Spain, Italy, Greece, Luxembourg, Austria, Finland, Sweden, United Kingdom and West Germany. Former EU-15 from 1978 to 1996, EU-27 since 1997.

Source: Commission services

Annex 13: The potential impact of the crisis

The potential long-term impact of the current economic crisis

Drastically deteriorated economic developments – and prospects – in the wake of the crisis add to the uncertainty as regards the buoyancy of economic growth in a medium- to long-term perspective. The economic crisis that took hold in 2008 has led to an unusually sharp and rapid deterioration in economic activity. The current slowdown has gradually transformed into a world recession. This has prompted the question of the extent to which the worsened short-term outlook would have implications for the growth potential of the EU economies also over the medium- and longer-term.[17]

There is a risk that the recovery will be characterised by a protracted period of weak potential GDP growth due to:

−   Wide-ranging lack of confidence, which could lead to postpone household consumption and efficient and profitable investments by firms;

−   Real economy effects of balance sheet adjustment in the financial sector; downsizing of banks' assets including writing off "impaired" or "toxic" assets, is likely to push up the cost of capital even in the presence of large recapitalisation packages;

−   Pervasive credit constraints and higher borrowing costs in the non-financial sector in light of the restructuring of banks; generally in the EU, deleveraging needs for households are lower than in the US, but firms are more heavily indebted than in the US. A persistent credit squeeze was one of the key factors of the long Japanese slump recorded in the 1990s and 2000s;

−   A persistent impact on the EU's growth potential might occur if there is a shift in the attitude to risk and a structurally and permanently higher cost of capital;

−   Slower growth in (total factor) productivity in the short and medium terms, induced by the reduction in ICT investment and knowledge-based investment such as R&D. this postponement of key innovation-prone investments may have a lasting effect on productivity and growth;

−   Permanent destruction in human capital caused by a surge in long-term unemployment induced by a protracted slowdown that might be aggravated by sluggish market adjustment in the EU. This permanent negative effect in terms of "know-how" or professional knowledge gives rise to the so-called "hysteresis" effect;

−   The collapse of world trade poses risks for a higher degree of protectionism. Given the global nature of the recession, an eventual revival of growth would require a rebalancing of growth from high-leverage countries to low-leverage countries. Failing to achieve such a rebalancing would have an adverse impact on EU growth, especially for export-oriented countries.

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[17] It should be borne in mind that estimating potential output growth is subject to uncertainty and that different methods for doing so exists. While in principle only structural factors matter for the estimation of the growth potential, it is very difficult to distinguish cyclical and structural factors in real time. This is all the more the case in times of rapid changes in economic activity, like for instance at the current juncture. For this reason, real-time estimates of potential growth, and of GDP output gaps, need to be interpreted with caution.

Scenarios for potential GDP growth in view of the economic crisis

The AWG/EPC baseline long-term macro-economic projections for potential growth included in the 2009 Ageing Report were based on the Commission's forecast made in Spring 2008. In order to simulate the order of magnitude of the risks over the long-term related to the ongoing economic crisis, alternative simulation scenarios have been carried out. In view of the large uncertainty regarding the length of the slump in economic activity, three scenarios were be considered: (i) a pessimistic scenario: "permanent shock"; (ii) a less pessimistic scenario: "lost decade", and; (iii) an optimistic scenario: "rebound".

Specifically, the scenarios included in the 2009 Ageing Report incorporate the downward revision of the estimated growth potential and its components based on the Commission January 2009 forecast. The latest forecast by the Commission was released in May 2009, and it entailed a further downward revision of the GDP growth potential in the medium-term.[18] On the basis of the May 2009 forecast, the alternative scenarios described above have been recalculated[19]:

- in the 'rebound' scenario, labour productivity growth and labour input (total hours worked) is assumed to accelerate to recover the loss in GDP by 2020 induced by the crisis.

- in the 'lost decade' scenario, labour productivity is assumed to reach the AWG baseline growth rate in 2020. Labour input (total hours worked) is assumed to reach the baseline growth rate in 2020.

- In the 'permanent shock' scenario, labour productivity growth and employment (total hours worked) is assumed to be permanently lower as a result of the crisis.

The impact on wealth creation of the crisis depends on its duration and the extent to which policies are put in place that successfully enhance the growth potential once out of the crisis. The effect is strongest in the 'permanent shock' scenario, but also the temporary shock scenarios have an adverse impact on the long-term growth potential. There are also considerable differences as to the impact at individual country level. Over the period 2007-20, the annual growth rate in EU27 is 0.8 to 0.9 p.p. lower on the lost decade and permanent shock scenario, respectively. Potential GDP growth for the EU27 coincides with the AWG baseline from 2020 in the 'lost decade' and 'rebound' scenarios, while it is slower in the 'permanent shock' scenario. Over the entire projection period 2007-2060, the average revision of potential GDP growth in the 'lost decade' scenario is 0.2 p.p. per year for the EU27. In the 'permanent shock' worst case scenario, a larger downward revision of the average annual GDP growth by 0.4 p.p. would materialize.

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[18] Potential GDP growth is estimated to be 0.8% in 2009 and 2010 based on the May 2009 forecast, compared with 1.3% based on the January 2009 forecast.

[19] The adjustment in each scenario to the 'pre-crisis' AWG baseline is assumed to take place between 2011 and 2020.

Figure 23 – Potential GDP growth compared: different crisis scenarios (annual % change)

EU27 - potential GDP growth
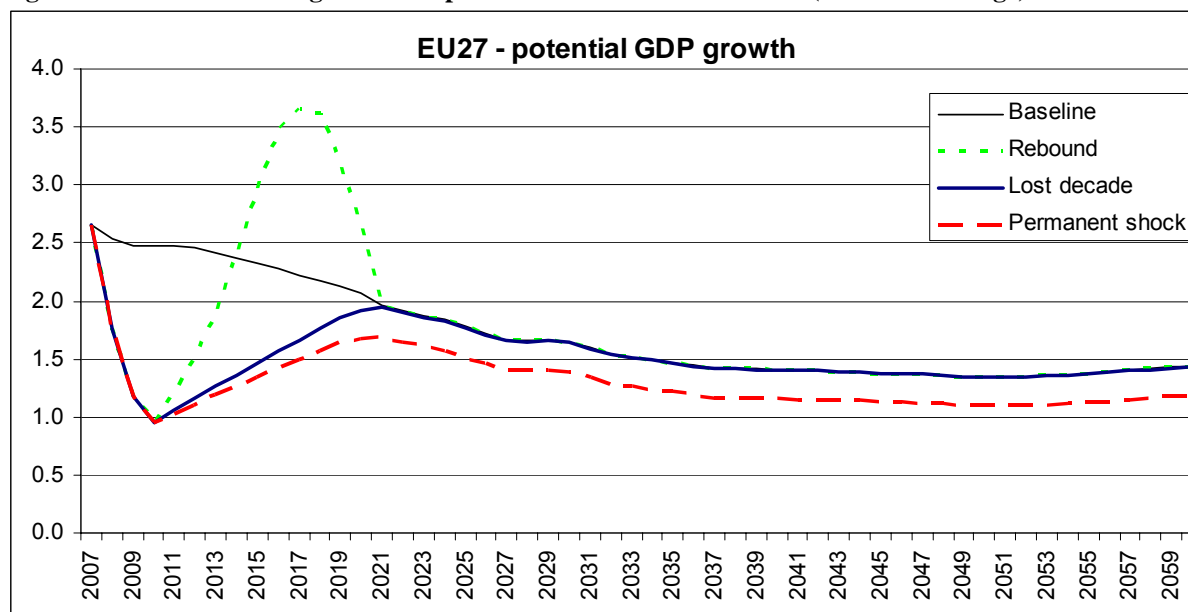
Source: Commission services, 2009 Sustainability Report.

All scenarios show a reduction in GDP per capita over the medium-term, of between 6 and 9% already by 2015. In the 'rebound' scenario, this would be recuperated by 2020, as the slump would be fully reversed. In the 'lost decade' scenario however, there is a reduction by assumption in the per-capita GDP level in 2060 compared with the baseline, which mirrors the lower expected potential growth in the decade up to 2020. This period is 'lost' in terms of accumulated wealth creation. The loss in GDP per capita in the EU27 is around 11% in 2020 and this loss is carried over the rest of the projection period, since the growth projection remains broadly unchanged between 2020 and 2060. In the 'rebound' scenario, the GDP per capita by 2060 is the same as in the AWG baseline (the deterioration relative to the baseline up to 2014 is offset by the improvement between 2015 and 2020). Finally, a more marked reduction in the GDP per capita level is observed in the 'permanent shock' scenario, where GDP per capita is 12% lower than in the AWG baseline in 2020, 16% lower in 2040 and as much as 20% lower in 2060, reflecting lower growth throughout the projection period up to 2060.

Table 13 - GDP per capita developments in EU27, difference from the AWG baseline, in %

EU27, GDP per capita, diff. from baseline (in %)					
	2010	2015	2020	2040	2060
Rebound	-2	-6	0	0	0
Lost decade	-2	-9	-11	-11	-11
Permanent shock	-2	-9	-12	-16	-20

Source: Commission services, 2009 Sustainability Report.

Estimating the possible budgetary impact of the economic crisis

Based on the three scenarios above, the budgetary impact of those shocks as compared to the AWG baseline is estimated.

− For public pension expenditure, the sensitivity tests of the projections to a change in the structural unemployment rate and to the productivity growth rate is used to calculate an elasticity of public pension with respect to changes in output.[20]

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[20]The sensitivity tests carried out in the 2009 Ageing Report were used to calculate the elasticities.

- For the other age-related government expenditure items, the projections were obtained re-running the different models (health care, long-term care, education and unemployment benefits) with the respective alternative macro-economic scenarios.

It should be recalled that the budgetary impact of an economic crisis in the short-term may be larger than indicated by the analysis in this chapter. In particular, it is assumed that the budgetary items respond fairly strongly to changes in GDP (there is in general a non-zero elasticity with respect to changes in GDP). However, in the (very) short-term some government expenditures might be (nearly) inelastic to GDP changes (e.g. health-care expenditure may grow at its trend increase for one or a few years on current policies even if GDP does not grow at trend rates, or even falls, depending on institutional setup in the different countries). Hence, there may be an upside risk to public expenditure in relation to GDP in times of a sharp slowdown of economic growth. On the other hand, a sharp slowdown, or even a drop of GDP may also bring about a corrective fiscal policy response. In previous recessions or 'crisis', some countries have introduced far-reaching 'crisis measures', for instance consisting of broad cuts in public expenditure across the board, thus mitigating possible trends increases in public spending.

BOX: Estimating the impact on pension spending of changes in macro-economic variables

In this report, the potential budgetary impact of varying underlying assumptions (productivity, employment) on pension spending, were carried out by the Commission using the sensitivity scenarios on the labour productivity growth rate and the structural unemployment rate and not by the Member States using the national pension models.

The elasticity of public pension expenditure with respect to changes in GDP is calculated as follows:

$$\varepsilon_t^{alt.scenario} = \frac{\left(\dfrac{P_t^{alt.scenario} - P_t^{baseline}}{P_t^{baseline}} \right)}{\left(\dfrac{GDP_t^{alt.scenario} - GDP_t^{baseline}}{GDP_t^{baseline}} \right)} \qquad (1)$$

where: P: pension expenditure (level)
           GDP: GDP (level)
           alt.scenario: the higher labour productivity scenario and the higher employment rate scenario, respectively

This elasticity is time-varying so as to capture potential changes in the relationship between GDP growth and pension expenditure over time that pension reforms might have induced.

Once the elasticity is calculated, the alternative 'crisis' scenario is imposed as the *'alt.scenario'*, and the change in pension expenditure vis-à-vis the baseline is solved for. It should be recalled that the alternative scenarios for pension expenditure carried out in the projection exercise relate to specific shocks (the 0.25 p.p. higher labour productivity growth rate and 1 p.p. lower structural unemployment rate scenarios). For shocks of a different size, the calculated elasticity above can be used as a proxy of the effect a shock on pension expenditure. However, it should be noted that the elasticity with respect to a shock of a different size might be different, if there are non-linearities that this simple model does not reflect.

Figure 24 – The potential budgetary impact of the crisis (pension and total age-related expenditure)
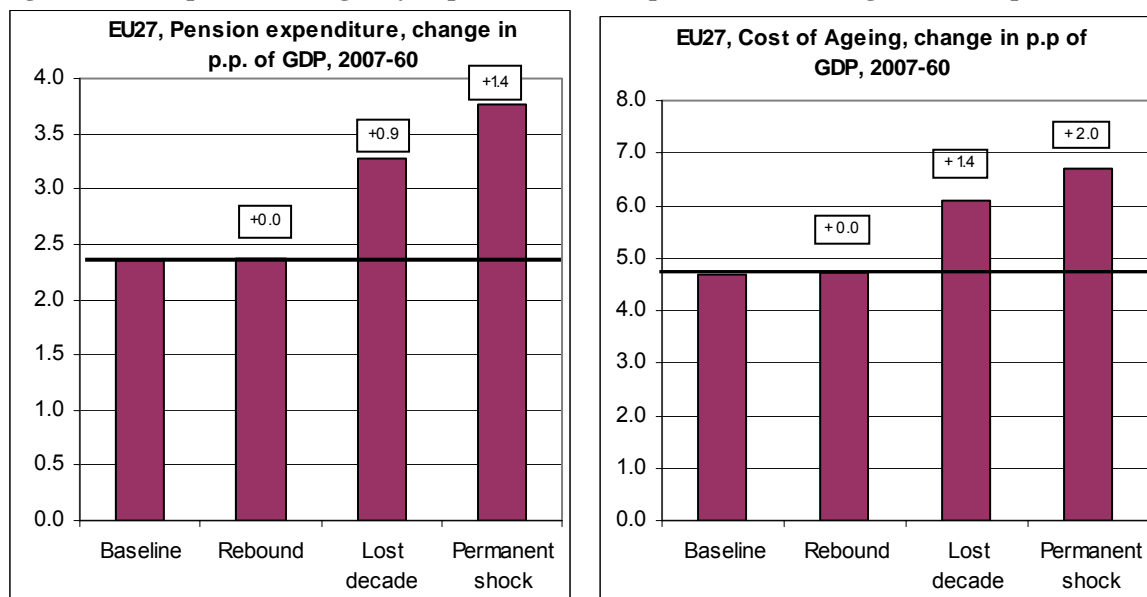
Source: Commission services, 2009 Sustainability Report.

In terms of budgetary impact, the nature of the shock determines its magnitude. All of the shocks, being negative, lead to higher age-related expenditure as a share of GDP. When considering the entire projection period up to 2060, the permanent shock to potential growth has a stronger adverse impact on the public expenditure ratio than the temporary shock – the lost decade scenario - and the rebound scenario is neutral in terms of budgetary impact up to 2060.

There are however different dynamics of the budgetary impact, depending on whether the shock is temporary or permanent. The *'lost decade' scenario* reveals that the public pension spending ratio increases faster in the first ten years of the projection period, and then slowly converges to the AWG baseline. Between 2007 and 2020, public pension expenditure in the EU would increase by 1 p.p. of GDP more relative to the AWG baseline. Over the whole period up to 2060, public pension expenditure would increase by 0.9 p.p. of GDP more relative to the AWG baseline.[21]

The *'permanent shock' scenario*, by contrast, shows a constant widening of the public expenditure ratio compared with the baseline. This reflects the fact that a permanently lower labour productivity growth rate leads to age-related government expenditure rising faster than GDP. Between 2007 and 2020, public pension expenditure would increase by 1.1 p.p. of GDP more relative to the AWG baseline. Over the entire projection period however, the public pension spending-to-GDP ratio would be 1.4 p.p. of GDP higher in the 'permanent shock' scenario compared with the AWG baseline.

Considering the full budgetary impact of ageing, i.e. including also government expenditure on health-care, long-term care, education and unemployment benefits, the *'lost decade'* scenario reveals that the age-related spending ratio would increase by 1 p.p. of GDP more relative to the AWG baseline between 2007 and 2020. Overall, age-related expenditure would increase by 1.4 p.p. of GDP more relative to the AWG baseline over the period 2007-2060 in the 'lost decade' scenario.

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[21] Compared with the estimates in the 2009 Ageing Report, the increase in the public pension to GDP ratio for the EU27 during 2007-2060 is 0.3 p.p. of GDP higher in both the 'lost decade' and 'permanent shock' scenarios.

In the *'permanent shock'* scenario, the total increase in age-related expenditure between 2007 and 2020 would be 1.5 p.p. of GDP higher than in the AWG baseline. Over the entire projection period however, the age-related public spending-to-GDP ratio would be 2.0 p.p. of GDP higher in the 'permanent shock' scenario compared with the AWG baseline. The Annex provides more details by Member State.

The dynamics of the impact of the crisis on public pension expenditure

The economic crisis results in falling nominal GDP levels in the very short-term and lower potential GDP levels as compared with the AWG baseline. At the same time, public pension expenditure is generally reduced less than the decline in income (GDP) in the EU (elasticity less than 1), due to e.g. less than 100% wage indexation of public pension benefits or specific design of the contribution/entitlement systems. This entails that the public pension to GDP ratio increases more than the AWG baseline in the short- to medium-term. In the longer-term, the estimated elasticity becomes higher; indicating that new pensions in the future adapt and become lower, since contributions made (income) has been lower. This implies that the difference between estimated public pension to GDP ratios in the 'lost decade' crisis scenario and the AWG baseline becomes smaller over time.

As a result, the increase in the public pension to GDP ratio measured over the period 2007-60 is higher in the 'lost decade' crisis scenario than in the AWG baseline. However, the higher increase in the pension ratio in the 'lost decade' crisis scenario becomes lower when measured over a later time horizon. In fact, the increase in the pension to GDP ratio in the 'lost decade' crisis scenario measured in the future, between 2020 and 2060, is lower than in the AWG baseline, and up to 2020 it is considerably higher.

Figure 25 – Dynamics of public pension expenditure compared (baseline and lost decade scenarios, % of GDP)
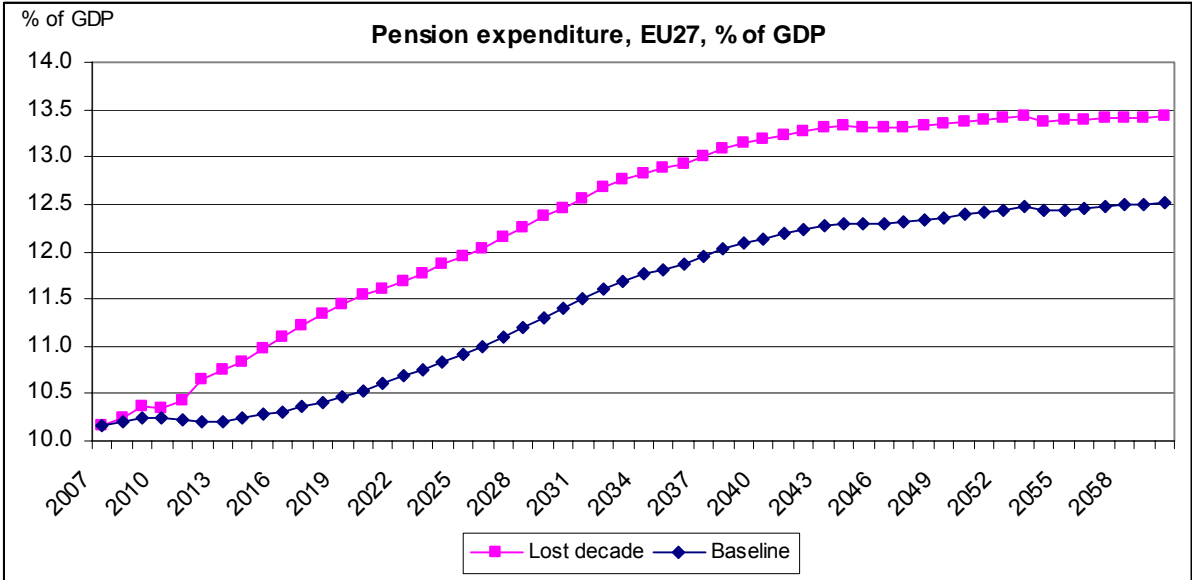
Source: Commission services.

Hence, under the no-policy change assumption, the impact of the crisis reveals that reliance (in part) on price indexation as opposed to wage indexation leads to higher pension expenditure relative to income (GDP) in the very short-term. Also, since public pension adapt in the long-term to income growth (reflecting the general feature of earnings-related pension benefits in the EU) under the no-policy change assumption, the higher increase in the 'lost decade' crisis scenario over the entire projection period becomes smaller when measured over

a future time horizon, and it even reverts when measured over a later time horizon of the projection period (see Table 16 for country-specific results).

Conclusions

In sum, the slowdown in the GDP growth potential is projected to happen already next decade in the EU on account of demographic trends, and the economic crisis is aggravating the slowdown in a no-policy change scenario. In a longer-term perspective, the EU working age-population is assumed to start decline early next decade, and labour is projected to act as a drag on output growth starting from the 2020s. In a medium-term perspective, the potential persistence of the economic crisis may lead to subdued potential growth due to both sluggish job and productivity growth already now, implying a risk of a lost decade in terms of wealth creation in the EU. These scenarios are a tentative approach that partially revises baseline projections. It aims at showing the possible deterioration of GDP levels and public expenditure[22].

These long-term simulations illustrate that at this juncture, characterized by very subdued economic activity and exceptional uncertainty as to the prospects, there is a very real need to put in place all necessary policies to avoid the current financial crisis turning into a permanent shock to the key determinants of potential growth (employment and labour productivity) as this would have a strong negative impact on future GDP, per capita income levels and budgetary conditions. Europe's ability to get out of the slump fast and to restore high and stable growth and sound public finances will depend crucially on its ability to deploy targeted and well co-ordinated policy responses built on structural reforms, as stressed by the European Economic Recovery Plan[23] and illustrated by the 'rebound' scenario.

The Commission stressed in its Communication on population ageing of 29 April[24] the need for resolute and determined efforts for EU Member States to put in place all necessary policies to make sure that the EU will emerge from the financial and economic crisis with a solid growth potential and ability to make full use of its human resources. To get the EU economies back on a path of solid long-term growth, expanding the degree to which existing factors of production have been used so far is the key.

For this to happen, it will be essential to implement a comprehensive exit strategy built on structural reforms so as to restore confidence in the EUs battered public finances. Notably this will involve prolonging working life and increasing participation of youth, women and older workers, reforming tax and benefit systems to make work pay along the flexicurity principle, reforming pension systems and making health and long-term care systems more efficient, alongside the necessary investment in education and research. A strong emphasis on these policies at the present juncture will help Europe to both emerge more resiliently from the current recession and to address the challenges of an ageing society. By pursuing vigorously the reform agenda, by investing massively in the quality of human resources and by removing barriers to the full use of its labour force, the EU can emerge stronger from the current economic crisis.

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[22] Specially, in countries such as Spain, where immigration has dropped during the crisis, this tentative pension projection overestimates future new pensions and corresponding spending.
[23] COM (2008) 800 final, 26 November 2008.
[24] COM (2009) 180, 29 April 2009.

Table 14 – Public pension expenditure under the AWG baseline and difference to the alternative scenarios, May 2009 vintage, p.p. change of GDP

	Public pension-to-GDP ratio, p.p. of GDP							
	Change 2007-2020				Change 2007-2060			
	Baseline (% of GDP)	*Difference from baseline*			Baseline (% of GDP)	*Difference from baseline*		
Country	Baseline (% of GDP)	*Rebound*	*Lost decade*	*Permanent shock*	Baseline (% of GDP)	*Rebound*	*Lost decade*	*Permanent shock*
BE	1.8	*0.0*	*1.2*	*1.3*	4.8	*0.0*	*1.6*	*2.7*
BG	0.1	*0.0*	*-0.1*	*0.0*	3.0	*0.0*	*-0.4*	*-0.1*
CZ	-0.9	*0.0*	*0.3*	*0.4*	3.3	*0.0*	*0.2*	*0.5*
DK	1.6	*0.0*	*-0.1*	*-0.1*	0.1	*0.0*	*-0.1*	*-0.1*
DE	0.0	*0.0*	*0.5*	*0.4*	2.3	*0.0*	*0.4*	*0.3*
EE	0.3	*0.0*	*0.4*	*0.5*	-0.7	*0.0*	*0.1*	*0.2*
IE	1.1	*0.0*	*2.8*	*2.8*	6.1	*0.0*	*5.0*	*5.0*
EL	1.5	*0.0*	*1.3*	*1.6*	12.4	*0.0*	*1.2*	*3.7*
ES	1.1	*0.0*	*1.9*	*2.0*	6.7	*0.0*	*3.3*	*4.6*
FR	0.6	*0.0*	*1.3*	*1.5*	1.0	*0.0*	*1.0*	*2.0*
IT	0.1	*0.0*	*1.2*	*1.4*	-0.4	*0.0*	*0.4*	*0.9*
CY	2.6	*0.0*	*1.3*	*1.7*	11.4	*0.0*	*0.8*	*1.6*
LV	-0.3	*0.0*	*1.2*	*1.3*	-0.4	*0.0*	*0.8*	*1.1*
LT	0.1	*0.0*	*0.6*	*0.6*	4.6	*0.0*	*0.9*	*0.9*
LU	1.2	*0.0*	*1.7*	*1.8*	15.2	*0.0*	*0.1*	*-0.1*
HU	0.2	*0.0*	*2.1*	*2.2*	3.0	*0.0*	*0.6*	*0.9*
MT	2.1	*0.0*	*0.8*	*0.9*	6.2	*0.0*	*0.9*	*1.8*
NL	1.2	*0.0*	*0.3*	*0.3*	4.0	*0.0*	*0.4*	*0.4*
AT	0.3	*0.0*	*1.4*	*1.6*	0.9	*0.0*	*1.3*	*2.7*
PL	-1.8	*0.0*	*0.6*	*0.7*	-2.8	*0.0*	*0.3*	*0.8*
PT	1.0	*0.0*	*1.5*	*1.6*	2.1	*0.0*	*1.7*	*2.6*
RO	2.3	*0.0*	*0.7*	*0.7*	9.2	*0.0*	*1.3*	*1.4*
SI	1.2	*0.0*	*-0.6*	*-0.7*	8.8	*0.0*	*0.2*	*-0.1*
SK	-0.5	*0.0*	*0.5*	*0.5*	3.4	*0.0*	*0.2*	*0.4*
FI	2.6	*0.0*	*1.1*	*1.2*	3.3	*0.0*	*0.6*	*1.2*
SE	-0.1	*0.0*	*1.1*	*1.1*	-0.1	*0.0*	*1.0*	*1.2*
UK	0.3	*0.0*	*0.3*	*0.3*	2.7	*0.0*	*0.6*	*0.7*
EU27	0.4	*0.0*	*1.0*	*1.1*	2.4	*0.0*	*0.9*	*1.4*
EA	0.5	*0.0*	*1.2*	*1.3*	2.7	*0.0*	*1.0*	*1.7*
EA12	0.5	*0.0*	*1.2*	*1.3*	2.7	*0.0*	*1.1*	*1.7*
EU15	0.5	*0.0*	*1.0*	*1.1*	2.4	*0.0*	*1.0*	*1.5*
EU10	-0.9	*0.0*	*0.7*	*0.8*	1.0	*0.0*	*0.4*	*0.7*
EU25	0.4	*0.0*	*1.0*	*1.1*	2.3	*0.0*	*0.9*	*1.4*

Source: Commission services.

Note: Hungary reformed its pension system in 2009. According to the revised pension projections, public pension expenditure is projected to decrease by 0.4 p.p. of GDP between 2007 and 2060. The revised projection is not included in this table.

Table 15 – Total age-related expenditure under the AWG baseline and difference to the alternative scenarios, May 2009 vintage, p.p. change of GDP

	Age-related expenditure-to-GDP ratio, p.p. of GDP							
	Change 2007-2020				Change 2007-2060			
Country	Baseline (% of GDP)	Rebound - Baseline	Lost decade - Baseline	Permanent shock - Baseline	Baseline (% of GDP)	Rebound - Baseline	Lost decade - Baseline	Permanent shock - Baseline
BE	1.7	0.0	1.7	2.2	6.9	0.1	2.2	3.7
BG	-0.1	0.0	-0.2	-0.1	3.7	0.0	-0.5	-0.3
CZ	-0.7	0.0	0.3	0.4	5.5	0.0	0.2	0.4
DK	2.6	0.0	-0.3	0.0	2.6	0.0	-0.3	0.0
DE	0.0	0.0	0.7	0.7	4.8	0.0	0.6	0.6
EE	0.2	0.0	0.5	0.6	0.4	0.0	0.2	0.3
IE	1.4	0.0	5.0	5.3	8.9	0.0	7.6	7.9
EL	1.9	0.0	1.3	1.6	15.9	0.0	1.2	3.7
ES	1.4	0.0	2.8	3.1	9.0	0.0	4.4	5.9
FR	0.9	0.0	1.5	1.9	2.7	0.0	1.2	2.3
IT	0.3	0.0	1.3	1.6	1.6	0.0	0.6	1.2
CY	1.3	0.1	1.6	2.0	10.8	0.0	1.1	2.0
LV	-0.7	0.0	1.6	1.7	0.4	0.0	1.3	1.6
LT	-0.7	0.0	0.8	0.8	5.4	0.0	1.2	1.1
LU	1.2	0.0	2.2	2.4	18.0	0.0	0.8	0.7
HU	-0.3	0.0	2.5	2.6	4.1	0.0	1.0	1.4
MT	2.3	0.0	0.7	0.9	10.2	0.0	0.7	1.7
NL	2.1	0.0	0.6	1.0	9.4	0.0	0.8	1.2
AT	0.3	0.0	1.6	1.9	3.1	0.0	1.5	3.1
PL	-2.7	0.0	0.5	0.7	-2.4	0.0	0.3	0.8
PT	0.8	0.0	1.8	2.1	3.4	0.0	2.0	3.1
RO	2.0	0.0	0.8	0.8	10.1	0.0	1.5	1.5
SI	2.0	0.0	-0.5	-0.5	12.8	0.0	0.3	0.1
SK	-0.7	0.0	0.4	0.5	5.2	0.0	0.2	0.3
FI	3.0	0.0	1.3	1.6	6.3	0.0	0.8	1.6
SE	-0.3	0.0	2.1	2.3	2.6	0.0	2.3	2.6
UK	0.8	0.0	0.6	0.6	5.1	0.0	0.8	0.9
EU27	0.5	0.0	1.3	1.5	4.7	0.0	1.4	2.0
EA	0.7	0.0	1.5	1.8	5.2	0.0	1.6	2.4
EA12	0.7	0.0	1.5	1.8	5.2	0.0	1.6	2.4
EU15	0.7	0.0	1.3	1.6	4.8	0.0	1.4	2.1
EU10	-1.4	0.0	0.7	0.8	2.1	0.0	0.4	0.8
EU25	0.5	0.0	1.3	1.5	4.7	0.0	1.4	2.0

Source: Commission services.

Note: Hungary reformed its pension system in 2009. According to the revised pension projections, public pension expenditure is projected to decrease by 0.4 p.p. of GDP between 2007 and 2060. The revised projection is not included in this table.

Table 16 – Changes in the public pension expenditure to GDP ratio under different time horizons, AWG baseline and lost decade scenarios, p.p. change of GDP

	2007-60			2010-60			2015-60		
	Baseline	Lost decade		Baseline	Lost decade		Baseline	Lost decade	
	(1)	(2)	(3)=(2)-(1)	(4)	(5)	(6)=(5)-(4)	(7)	(8)	(9)=(8)-(7)
BE	4.8	6.3	1.6	4.5	5.7	1.2	2.9	4.5	1.6
BG	3.0	2.6	-0.4	2.2	1.5	-0.7	2.9	2.2	-0.7
CZ	3.3	3.5	0.2	4.0	4.0	0.0	4.2	4.1	-0.1
DK	0.1	0.0	-0.1	-0.2	-0.3	-0.1	-1.5	-1.0	0.5
DE	2.3	2.7	0.4	2.5	3.9	1.4	2.3	3.0	0.7
EE	-0.7	-0.6	0.1	-1.6	-2.0	-0.4	-1.0	-1.6	-0.7
IE	6.1	11.1	5.0	5.9	10.1	4.2	5.0	8.2	3.2
EL	12.4	13.6	1.2	12.5	3.8	-8.7	10.9	11.3	0.4
ES	6.7	10.0	3.3	6.2	8.9	2.7	5.6	7.7	2.0
FR	1.0	2.0	1.0	0.6	1.2	0.7	0.4	0.5	0.1
IT	-0.4	0.0	0.4	-0.4	-0.4	0.0	-0.5	-1.0	-0.5
CY	11.4	12.3	0.8	10.8	10.4	-0.3	8.8	9.1	0.3
LV	-0.4	0.5	0.8	0.0	0.2	0.2	-0.1	0.0	0.1
LT	4.6	5.5	0.9	4.9	5.5	0.7	4.5	5.3	0.8
LU	15.2	15.3	0.1	15.3	14.9	-0.4	14.1	13.8	-0.3
HU	3.0	3.6	0.6	2.6	2.5	-0.1	2.8	1.7	-1.1
MT	6.2	7.0	0.9	5.1	9.3	4.2	4.1	4.5	0.4
NL	4.0	4.4	0.4	4.0	4.3	0.3	2.8	3.5	0.8
AT	0.9	2.2	1.3	1.0	2.1	1.1	0.6	1.2	0.6
PL	-2.8	-2.5	0.3	-2.1	-2.2	-0.2	-1.0	-1.1	-0.1
PT	2.1	3.7	1.7	1.5	2.6	1.1	1.1	2.2	1.1
RO	9.2	10.6	1.3	7.4	8.5	1.0	7.0	8.1	1.1
SI	8.8	9.0	0.2	8.5	11.7	3.2	7.5	9.8	2.3
SK	3.4	3.6	0.2	3.6	3.5	-0.1	3.9	3.6	-0.3
FI	3.3	4.0	0.6	2.6	2.8	0.1	0.7	1.4	0.7
SE	-0.1	0.9	1.0	-0.2	0.4	0.6	0.0	0.5	0.5
UK	2.7	3.3	0.6	2.5	3.2	0.7	2.4	3.1	0.7
EU27	2.4	3.3	0.9	2.3	3.1	0.8	2.0	2.4	0.5
EA	2.7	3.8	1.0	2.6	3.5	0.9	2.2	2.7	0.5

Source: Commission services.

Note: Hungary reformed its pension system in 2009. According to the revised pension projections, public pension expenditure is projected to decrease by 0.4 p.p. of GDP between 2007 and 2060. The revised projection is not included in this table.

Table 17 – Potential GDP growth compared: deviation from AWG baseline in p.p., estimates based on the May 2009 Commission forecast

	Annual average GDP growth rate, difference from 2009 Ageing Report (2009 Ageing Report - April 2009 update)															
	Permanent shock					Lost decade					Rebound					
Country	2007-10	2011-20	2021-40	2041-60	2007-60	2007-10	2011-20	2021-40	2041-60	2007-60	2007-10	2011-20	2021-40	2041-60	2007-60	Country
BE	0.8	1.0	0.2	0.2	0.4	0.8	0.8	0.0	0.0	0.2	0.8	-0.3	0.0	0.0	0.0	BE
BG	0.7	0.3	0.3	0.2	0.3	0.7	0.2	0.0	0.0	0.1	0.7	-0.3	0.0	0.0	0.0	BG
CZ	1.2	0.6	0.3	0.2	0.4	1.2	0.4	0.0	0.0	0.2	1.2	-0.5	0.0	0.0	0.0	CZ
DK	0.8	0.6	0.2	0.2	0.4	0.8	0.5	0.0	0.0	0.1	0.8	-0.3	0.0	0.0	0.0	DK
DE	0.7	0.8	0.2	0.3	0.4	0.7	0.7	0.0	0.0	0.2	0.7	-0.3	0.0	0.0	0.0	DE
EE	3.4	1.6	0.3	0.2	0.7	3.4	1.4	0.0	0.0	0.5	3.4	-1.4	0.0	0.0	0.0	EE
IE	3.1	2.5	0.2	0.2	0.9	3.1	2.4	0.0	0.0	0.7	3.1	-1.2	0.0	0.0	0.0	IE
EL	0.8	0.4	0.3	0.2	0.3	0.8	0.3	0.0	0.0	0.1	0.8	-0.3	0.0	0.0	0.0	EL
ES	1.6	1.3	0.2	0.3	0.5	1.6	1.2	0.0	0.0	0.3	1.6	-0.6	0.0	0.0	0.0	ES
FR	0.7	0.8	0.2	0.3	0.4	0.7	0.7	0.0	0.0	0.2	0.7	-0.3	0.0	0.0	0.0	FR
IT	0.7	0.8	0.2	0.3	0.4	0.7	0.7	0.0	0.0	0.2	0.7	-0.3	0.0	0.0	0.0	IT
CY	0.8	0.8	0.3	0.2	0.4	0.8	0.7	0.0	0.0	0.2	0.8	-0.3	0.0	0.0	0.0	CY
LV	4.1	2.2	0.3	0.2	0.9	4.1	2.0	0.0	0.0	0.7	4.1	-1.7	0.0	0.0	0.0	LV
LT	2.7	1.8	0.3	0.2	0.7	2.7	1.6	0.0	0.0	0.5	2.7	-1.1	0.0	0.0	0.0	LT
LU	1.5	1.6	0.3	0.3	0.6	1.5	1.5	0.0	0.0	0.4	1.5	-0.6	0.0	0.0	0.0	LU
HU	2.0	1.6	0.3	0.2	0.6	2.0	1.4	0.0	0.0	0.4	2.0	-0.8	0.0	0.0	0.0	HU
MT	1.0	0.9	0.2	0.2	0.4	1.0	0.8	0.0	0.0	0.2	1.0	-0.4	0.0	0.0	0.0	MT
NL	0.5	0.7	0.2	0.3	0.4	0.5	0.5	0.0	0.0	0.1	0.5	-0.2	0.0	0.0	0.0	NL
AT	0.7	0.6	0.2	0.3	0.4	0.7	0.5	0.0	0.0	0.1	0.7	-0.3	0.0	0.0	0.0	AT
PL	1.2	0.5	0.2	0.2	0.4	1.2	0.4	0.0	0.0	0.2	1.2	-0.5	0.0	0.0	0.0	PL
PT	1.2	1.1	0.2	0.3	0.5	1.2	0.9	0.0	0.0	0.3	1.2	-0.5	0.0	0.0	0.0	PT
RO	1.5	0.9	0.3	0.2	0.5	1.5	0.8	0.0	0.0	0.3	1.5	-0.6	0.0	0.0	0.0	RO
SI	1.1	0.8	0.3	0.2	0.4	1.1	0.7	0.0	0.0	0.2	1.1	-0.5	0.0	0.0	0.0	SI
SK	1.4	0.9	0.3	0.2	0.4	1.4	0.7	0.0	0.0	0.2	1.4	-0.5	0.0	0.0	0.0	SK
FI	1.2	0.8	0.2	0.2	0.4	1.2	0.6	0.0	0.0	0.2	1.2	-0.5	0.0	0.0	0.0	FI
SE	1.1	1.2	0.2	0.2	0.5	1.1	1.1	0.0	0.0	0.3	1.1	-0.4	0.0	0.0	0.0	SE
UK	1.0	1.0	0.2	0.2	0.5	1.0	0.9	0.0	0.0	0.2	1.0	-0.4	0.0	0.0	0.0	UK
EA	0.9	0.9	0.2	0.2	0.4	0.9	0.8	0.0	0.0	0.2	0.9	-0.3	0.0	0.0	0.0	EA
EU27	1.0	0.9	0.2	0.2	0.4	1.0	0.8	0.0	0.0	0.2	1.0	-0.4	0.0	0.0	0.0	EU27
EU15	0.9	0.9	0.2	0.2	0.4	0.9	0.8	0.0	0.0	0.2	0.9	-0.3	0.0	0.0	0.0	EU15
EU10	1.5	0.8	0.3	0.2	0.4	1.5	0.7	0.0	0.0	0.2	1.5	-0.6	0.0	0.0	0.0	EU10
EU25	1.0	0.9	0.2	0.2	0.4	1.0	0.8	0.0	0.0	0.2	1.0	-0.4	0.0	0.0	0.0	EU25

Source: Commission services. Note: Hungary reformed its pension system in 2009. According to the revised pension projections, public pension expenditure is projected to decrease by 0.4 p.p. of GDP between 2007 and 2060. The revised projection is not included in this table.

Annex 14: Sustainability indicators in the 2009/10 SCPs

Table 18 – Sustainability indicators in the 2009 scenario and the Programme scenario based on the 2009/10 SCPs

	2009 scenario			Programme scenario		
	S2	IBP*	LTC	S2	IBP	LTC
BE	6.5	1.7	4.8	4.6	-0.2	4.8
BG	2.8	1.0	1.9	0.3	-1.6	1.9
CZ	9.8	5.8	4.0	6.2	2.2	4.0
DK	-1.4	-1.8	0.4	0.5	0.1	0.4
DE	4.5	0.7	3.7	4.6	0.9	3.7
EE	1.2	1.3	0.0	-0.5	-0.5	0.0
IE	14.8	8.3	6.5	6.4	-0.1	6.5
EL	20.3	8.7	11.5	9.6	-1.9	11.5
ES	15.3	9.6	5.7	6.8	1.1	5.7
FR	7.1	5.3	1.8	2.9	1.0	1.8
IT	2.6	1.1	1.6	-0.1	-1.6	1.6
CY	12.5	4.1	8.4	9.0	0.6	8.4
LV	9.0	7.6	1.4	1.1	-0.3	1.4
LT	10.4	6.9	3.5	4.3	0.8	3.5
LU	12.7	-0.7	13.4	15.6	2.1	13.4
HU	-1.3	-1.6	0.3	0.2	0.0	0.3
MT	6.4	1.1	5.3	6.6	1.3	5.3
NL	8.5	3.6	4.9	8.1	3.2	4.9
AT	4.6	1.4	3.2	4.0	0.8	3.2
PL	5.6	6.0	-0.4	0.5	0.8	-0.4
PT	8.9	7.0	1.9	1.6	-0.2	1.9
RO	9.7	4.6	5.1	3.8	-1.3	5.1
SI	12.2	4.1	8.1	8.6	0.4	8.1
SK	8.5	5.2	3.3	5.2	1.9	3.3
FI	4.3	0.2	4.1	7.0	3.0	4.1
SE	0.5	-1.5	1.9	1.1	-0.8	1.9
UK	13.5	9.9	3.6	5.5	1.9	3.6
EU-27	7.5	4.3	3.3	6.0	2.8	3.3
EA	6.8	3.3	3.6	6.1	2.5	3.6

Source: Commission services

Annex 15: The total cost of ageing in the Member States

Table 19 – Projected change in age-related expenditure, 2007-2060, p.p. of GDP

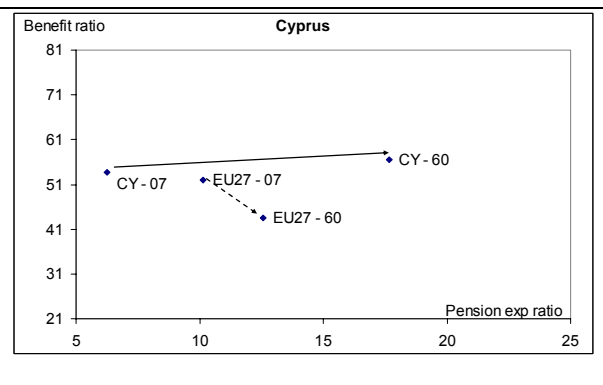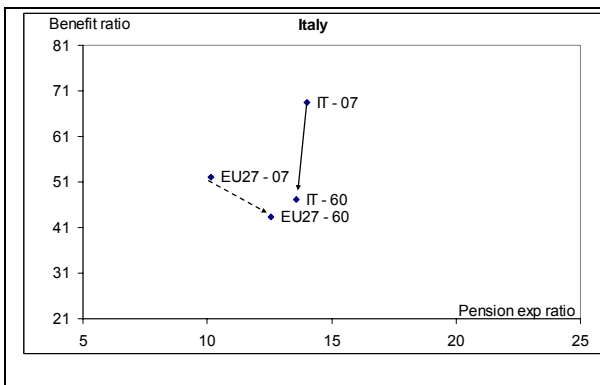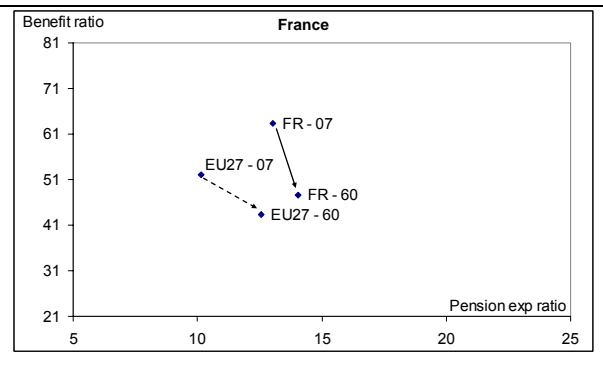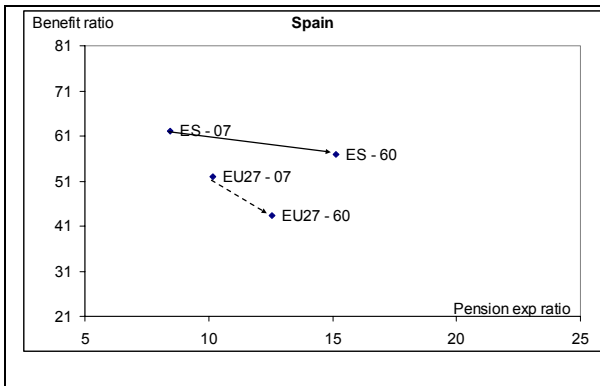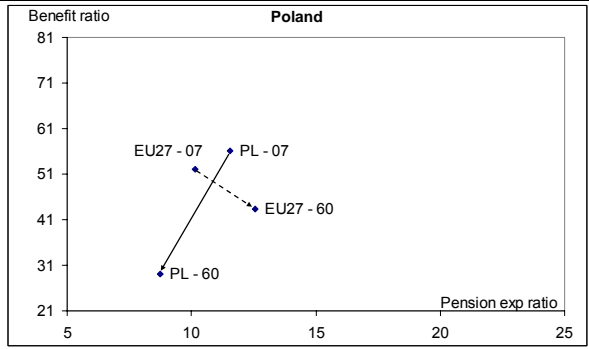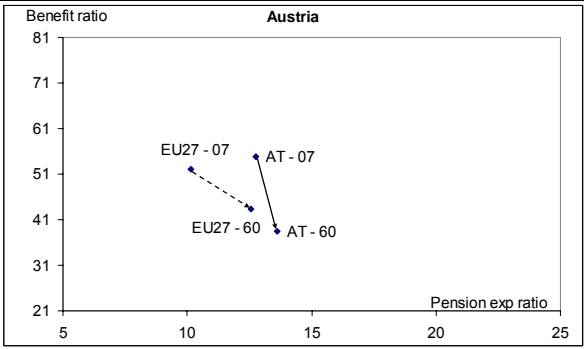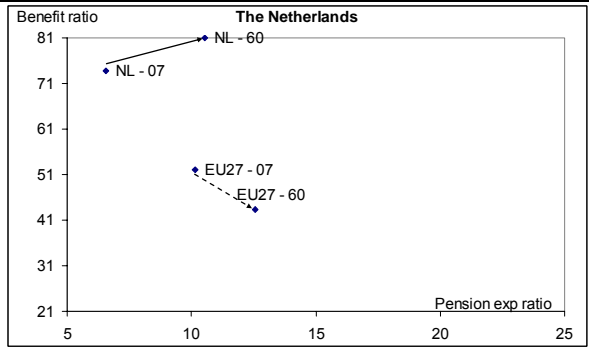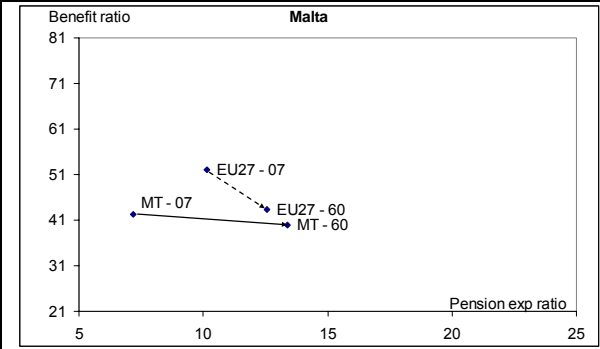|	Pensions			Health care			Long-term care			Unemployment benefits			Education			Total			
	Level	Change	Change	Level	Change	Change	Level	Change	Change	Level	Change	Change	Level	Change	Change	Level	Change	Change	
		2007	2007		2007	2007		2007	2007		2007	2007		2007	2007		2007	2007	
	2007	2035	2060	2007	2035	2060	2007	2035	2060	2007	2035	2060	2007	2035	2060	2007	2035	2060	
BE	10.0	4.4	4.8	7.6	1.0	1.2	1.5	0.7	1.4	1.9	-0.4	-0.4	5.5	-0.1	0.0	26.5	5.6	6.9	BE
BG	8.3	0.7	3.0	4.7	0.6	0.7	0.2	0.1	0.2	0.1	0.0	0.0	3.3	-0.5	-0.2	16.6	0.8	3.7	BG
CZ	7.8	-0.2	3.3	6.2	1.4	2.2	0.2	0.2	0.4	0.1	0.0	0.0	3.5	-0.5	-0.3	17.9	0.9	5.5	CZ
DK	9.1	1.4	0.1	5.9	0.8	1.0	1.7	1.1	1.5	1.0	-0.2	-0.2	7.1	0.4	0.2	24.8	3.6	2.6	DK
DE	10.4	1.4	2.3	7.4	1.4	1.8	0.9	0.7	1.4	0.9	-0.3	-0.3	3.9	-0.5	-0.4	23.6	2.6	4.8	DE
EE	5.6	-0.2	-0.7	4.9	0.7	1.2	0.1	0.0	0.1	0.1	0.0	0.0	3.7	-0.4	-0.2	14.3	0.1	0.4	EE
IE	5.2	2.8	6.1	5.8	0.9	1.8	0.8	0.4	1.3	0.8	0.1	0.1	4.5	-0.4	-0.3	17.2	3.7	8.9	IE
EL	11.7	7.7	12.4	5.0	0.9	1.4	1.4	0.8	2.2	0.3	-0.1	-0.1	3.7	-0.3	0.0	22.1	9.1	15.9	EL
ES	8.4	3.4	6.7	5.5	1.0	1.6	0.5	0.5	0.9	1.3	-0.4	-0.4	3.5	-0.3	0.1	19.3	4.3	9.0	ES
FR	13.0	1.4	1.0	8.1	1.0	1.2	1.4	0.5	0.8	1.2	-0.3	-0.3	4.7	0.0	0.0	28.4	2.7	2.7	FR
IT	14.0	1.2	-0.4	5.9	0.9	1.1	1.7	0.5	1.3	0.4	0.0	0.0	4.1	-0.6	-0.3	26.0	2.0	1.6	IT
CY	6.3	5.4	11.4	2.7	0.4	0.6	0.0	0.0	0.0	0.3	-0.1	-0.1	6.1	-1.2	-1.2	15.4	4.5	10.8	CY
LV	5.4	0.7	-0.4	3.5	0.4	0.6	0.4	0.2	0.5	0.2	0.0	0.0	3.7	-0.6	-0.3	13.2	0.6	0.4	LV
LT	6.8	1.9	4.6	4.5	0.7	1.1	0.5	0.2	0.6	0.1	0.0	0.0	4.0	-1.0	-0.9	15.8	1.8	5.4	LT
LU	8.7	8.0	15.2	5.8	0.9	1.2	1.4	0.7	2.0	0.4	0.0	0.0	3.8	-0.5	-0.5	20.0	9.1	18.0	LU
HU	10.9	-2.7	-0.4	5.8	0.7	1.3	0.3	0.1	0.4	0.3	-0.1	-0.1	4.4	-0.7	-0.4	21.6	-2.6	0.8	HU
MT	7.2	2.5	6.2	4.7	2.2	3.3	1.0	0.9	1.6	0.4	0.0	0.0	5.0	-1.2	-1.0	18.2	4.4	10.2	MT
NL	6.6	3.4	4.0	4.8	0.9	1.0	3.4	2.8	4.7	1.1	-0.1	-0.1	4.6	-0.2	-0.2	20.5	6.9	9.4	NL
AT	12.8	1.2	0.9	6.5	1.2	1.5	1.3	0.6	1.2	0.7	0.0	0.0	4.8	-0.6	-0.5	26.0	2.3	3.1	AT
PL	11.6	-2.3	-2.8	4.0	0.7	1.0	0.4	0.2	0.7	0.1	-0.1	-0.1	4.4	-1.3	-1.2	20.5	-2.7	-2.4	PL
PT	11.4	0.9	2.1	7.2	1.0	1.9	0.1	0.0	0.1	1.2	-0.4	-0.4	4.6	-0.6	-0.3	24.5	1.1	3.4	PT
RO	6.6	5.0	9.2	3.5	0.7	1.4	0.0	0.0	0.0	0.2	0.0	0.0	2.8	-0.6	-0.5	13.1	5.0	10.1	RO
SI	9.9	4.9	8.8	6.6	1.4	1.9	1.1	0.9	1.8	0.2	0.0	0.0	5.1	-0.2	0.4	22.9	6.9	12.8	SI
SK	6.8	1.0	3.4	5.0	1.5	2.3	0.2	0.1	0.4	0.1	-0.1	-0.1	3.1	-1.0	-0.8	15.2	1.6	5.2	SK
FI	10.0	3.9	3.3	5.5	0.9	1.0	1.8	1.7	2.6	1.2	-0.2	-0.2	5.7	-0.2	-0.3	24.2	6.1	6.3	FI
SE	9.5	-0.1	-0.1	7.2	0.6	0.8	3.5	1.3	2.3	0.9	-0.1	-0.1	6.0	-0.3	-0.3	27.2	1.5	2.6	SE
UK	6.6	1.3	2.7	7.5	1.2	1.9	0.8	0.3	0.5	0.2	0.0	0.0	3.8	0.0	-0.1	18.9	2.7	5.1	UK
NO	8.9	4.3	4.7	5.6	1.0	1.3	2.2	1.2	2.7	0.2	0.2	0.2	7.9	0.1	0.1	24.9	6.8	9.0	NO
EU27	10.2	1.7	2.4	6.7	1.0	1.5	1.2	0.6	1.1	0.8	-0.2	-0.2	4.3	-0.3	-0.2	23.1	2.7	4.7	EU27
EA	11.1	2.1	2.8	6.7	1.0	1.4	1.3	0.7	1.4	1.0	-0.2	-0.2	4.2	-0.3	-0.2	24.3	3.2	5.2	EA
EU15	10.2	1.8	2.4	6.9	1.0	1.5	1.3	0.6	1.2	0.8	-0.2	-0.2	4.3	-0.3	-0.1	23.5	3.0	4.8	EU15
EU12	9.2	0.4	2.3	4.7	0.8	1.3	0.3	0.2	0.5	0.2	0.0	0.0	3.9	-0.9	-0.7	18.3	0.4	3.4	EU12
EU25	10.2	1.6	2.3	6.8	1.0	1.5	1.2	0.6	1.2	0.8	-0.2	-0.2	4.3	-0.3	-0.2	23.3	2.7	4.7	EU25
EA12	11.1	2.1	2.8	6.7	1.0	1.4	1.3	0.7	1.4	1.0	-0.2	-0.2	4.2	-0.3	-0.2	24.4	3.3	5.2	EA12
EU10	9.7	-0.5	1.0	4.9	0.9	1.4	0.4	0.2	0.6	0.2	0.0	0.0	4.2	-1.0	-0.8	19.2	-0.4	2.1	EU10

Source: 2009 Ageing Report.
Note: Hungary reformed its pension system in 2009. Following the reform, its impact was assessed through a peer review by the AWG, and endorsed by the EPC at their 22 February 2010 meeting. According to the revised pension projections, public pension expenditure is projected to decrease from 10.9% of GDP in 2007 to 10.5% of GDP in 2060, i.e. by 0.4 p.p. of GDP, compared with the projection in the 2009 Ageing Report, where an increase of 3 p.p. of GDP between 2007 and 2060 was projected.
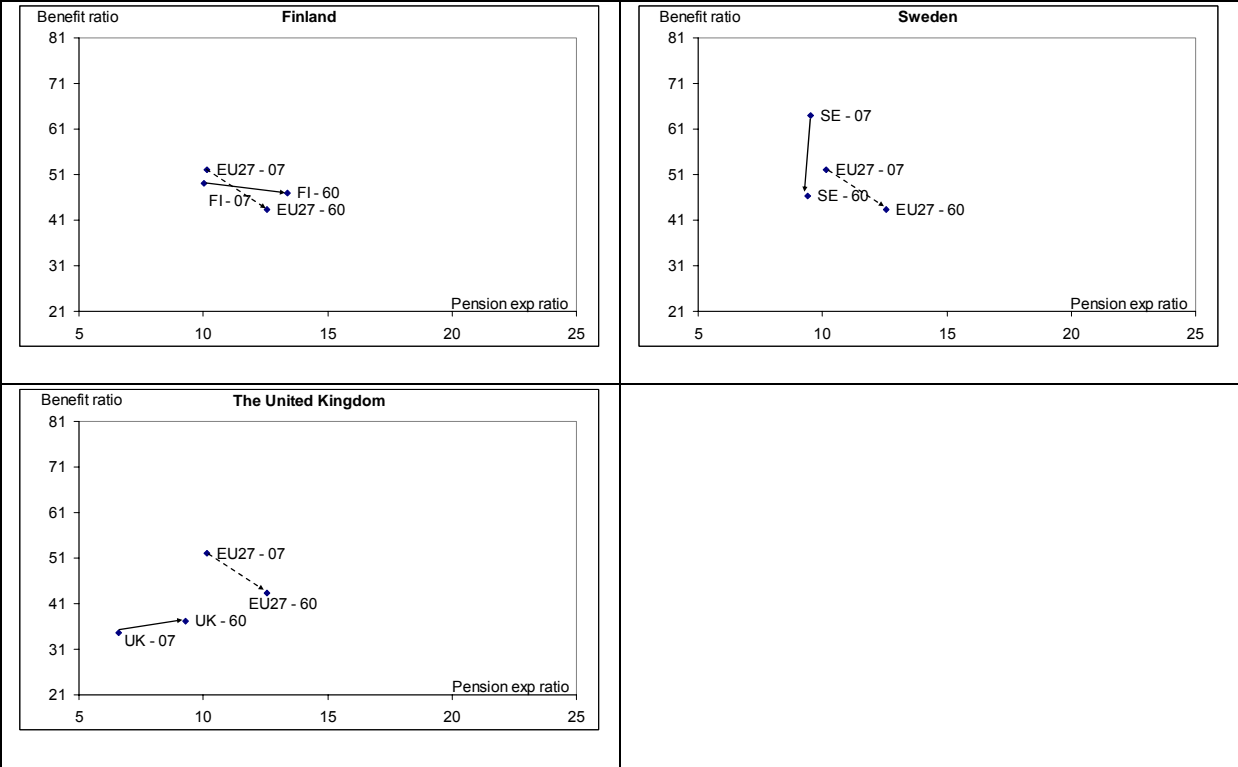
Annex 16: Pension expenditure, benefit ratio and net theoretical replacement rate

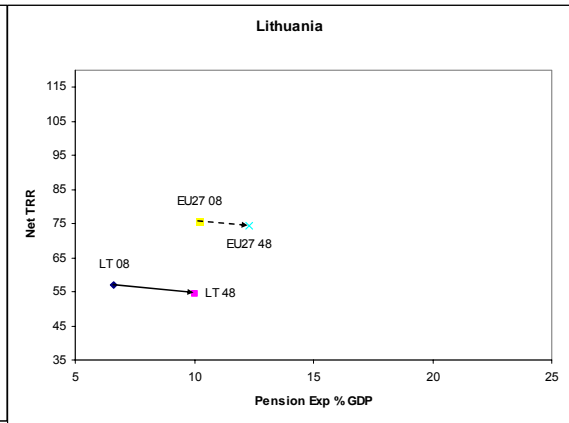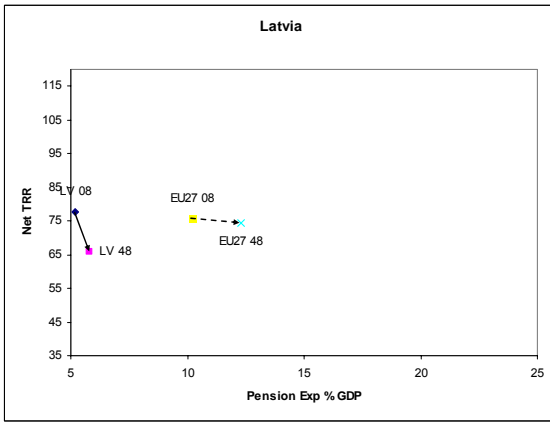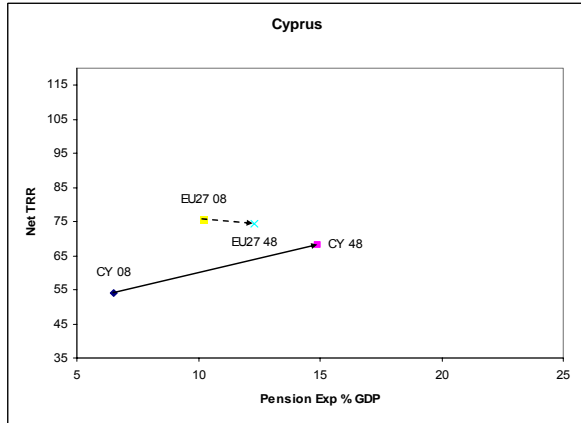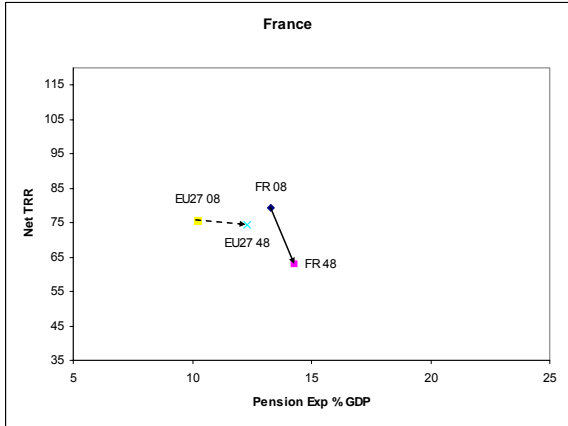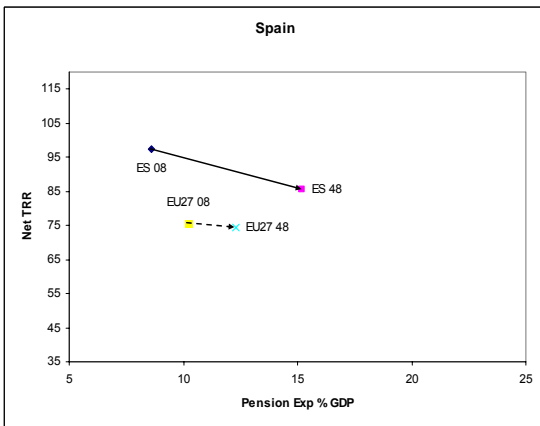**Figure 26 - The pension expenditure ratio and the benefit ratio in EU Member States (2007-60)**

Spain

Benefit ratio — Pension exp ratio

- ES - 07
- ES - 60
- EU27 - 07
- EU27 - 60

France

Benefit ratio — Pension exp ratio

- FR - 07
- FR - 60
- EU27 - 07
- EU27 - 60

Italy

Benefit ratio — Pension exp ratio

- IT - 07
- IT - 60
- EU27 - 07
- EU27 - 60

Cyprus

Benefit ratio — Pension exp ratio

- CY - 07
- CY - 60
- EU27 - 07
- EU27 - 60

Latvia

Benefit ratio — Pension exp ratio

- EU27 - 07
- EU27 - 60
- LV - 60
- LV - 07

Lithuania

Benefit ratio — Pension exp ratio

- EU27 - 07
- EU27 - 60
- LT - 07
- LT - 60

Luxembourg

Benefit ratio — Pension exp ratio

- EU27 - 07
- EU27 - 60
- LU - 07
- LU - 60

Hungary

Benefit ratio — Pension exp ratio

- EU27 - 07
- EU27 - 60
- HU - 07
- HU - 60

Malta

Benefit ratio

EU27 - 07
MT - 07
EU27 - 60
MT - 60

Pension exp ratio

The Netherlands

Benefit ratio

NL - 60
NL - 07
EU27 - 07
EU27 - 60

Pension exp ratio

Austria

Benefit ratio

EU27 - 07
AT - 07
EU27 - 60
AT - 60

Pension exp ratio

Poland

Benefit ratio

EU27 - 07
PL - 07
EU27 - 60
PL - 60

Pension exp ratio

Portugal

Benefit ratio

EU27 - 07
PT - 07
EU27 - 60
PT - 60

Pension exp ratio

Romania

Benefit ratio

EU27 - 07
EU27 - 60
RO - 60
RO - 07

Pension exp ratio

Slovenia

Benefit ratio

EU27 - 07
EU27 - 60
SI - 60
SI - 07

Pension exp ratio

Slovakia

Benefit ratio

EU27 - 07
SK - 07
EU27 - 60
SK - 60

Pension exp ratio

Finland (Benefit ratio vs Pension exp ratio)
- EU27 - 07
- FI - 07
- FI - 60
- EU27 - 60

Sweden (Benefit ratio vs Pension exp ratio)
- SE - 07
- EU27 - 07
- SE - 60
- EU27 - 60

The United Kingdom (Benefit ratio vs Pension exp ratio)
- EU27 - 07
- EU27 - 60
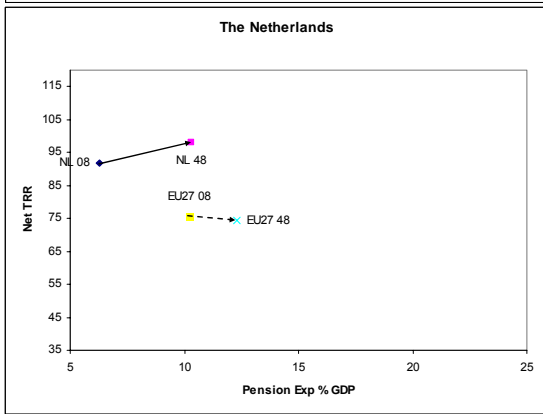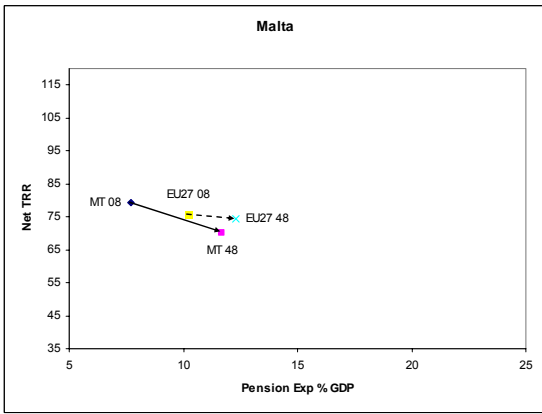- UK - 07
- UK - 60
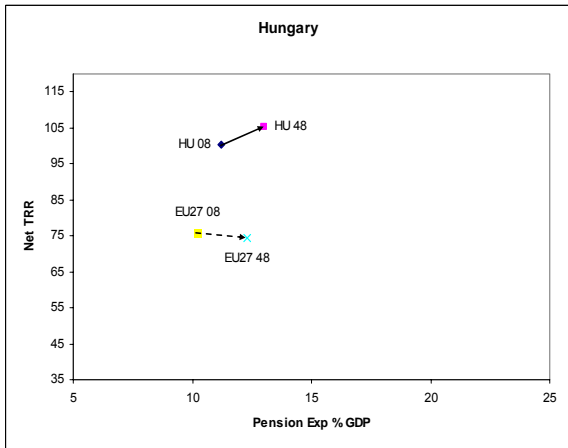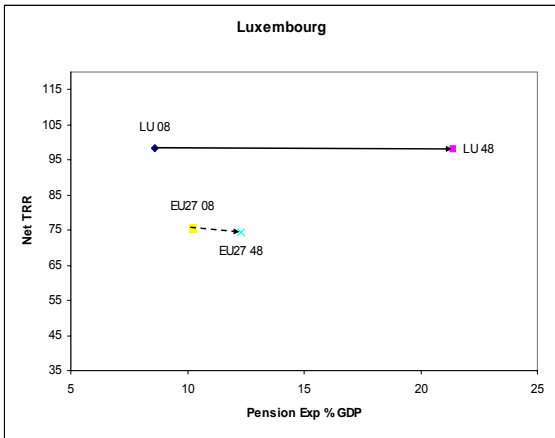
Source: Commission services

Note: The horizontal axis shows the projected public pension expenditure as a share of GDP over the period 2007-60. The vertical axis shows to the projected benefit ratio over the period 2007-60. The benefit ratio is defined as the average pension in relation to the average wage. The calculation of the benefit ratio includes public pensions and in addition private pensions to the extent this information was available in the 2009 Ageing Report. See the 2009 Ageing Report for further details. Hungary reformed its pension system in 2009. According to the revised pension projections, public pension expenditure is projected to decrease by 0.4 p.p. of GDP between 2007 and 2060. The revised projection is not included in this table.
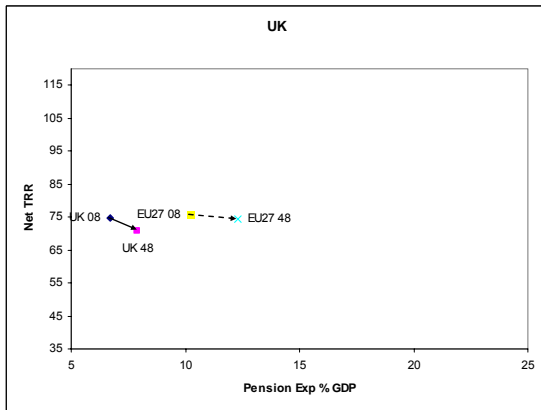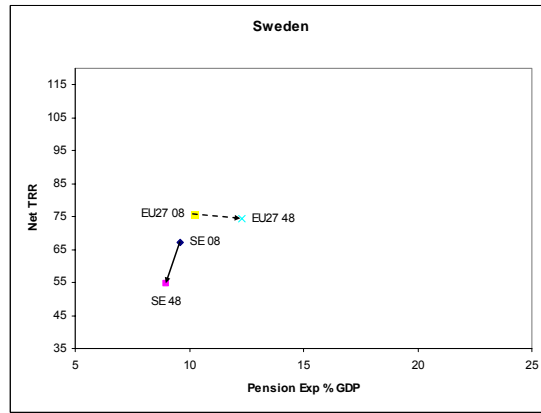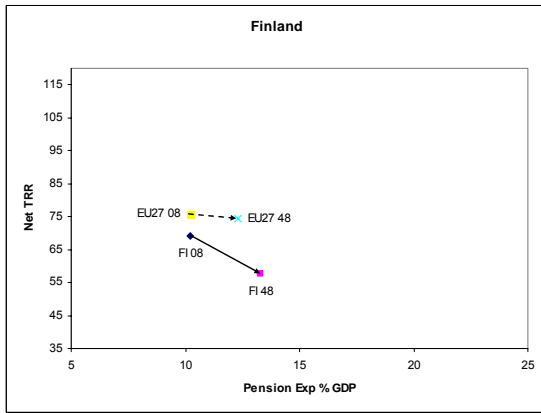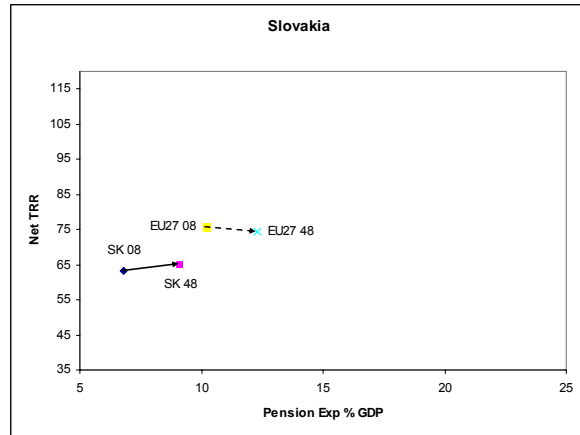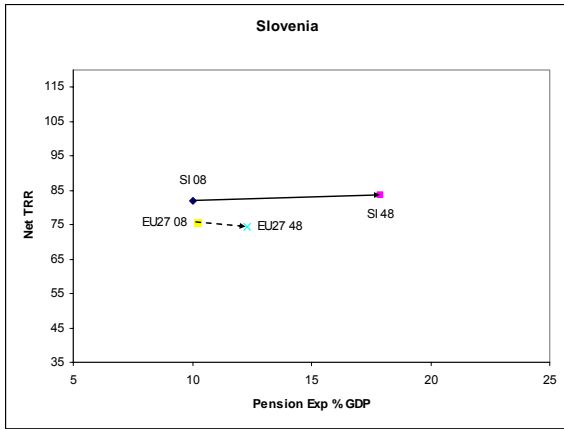
Figure 27 - The pension expenditure ratio (2008-2048) and the net theoretical replacement rates (2006-2046) in EU Member States [25]
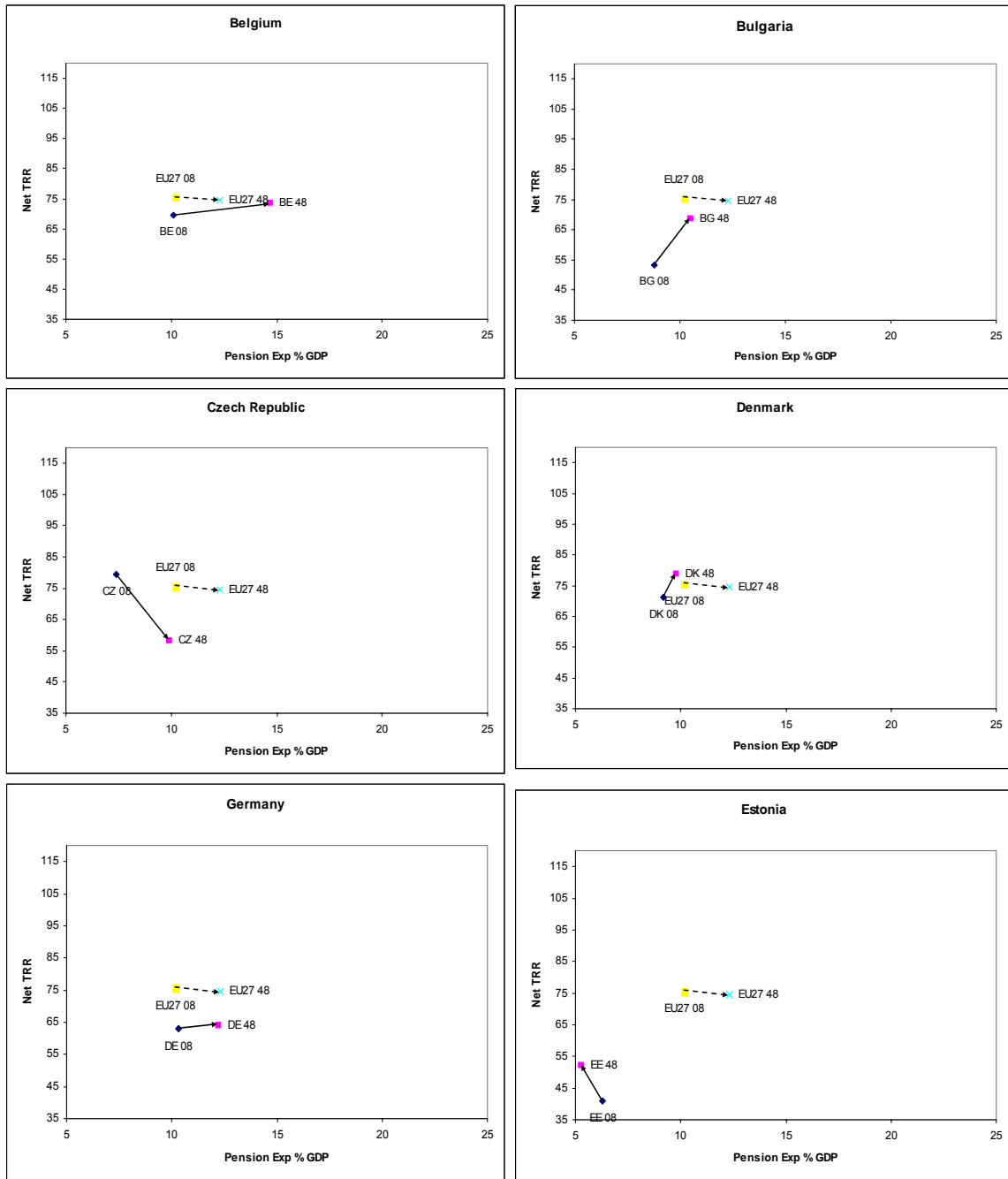
[25] Note that different methodologies apply to TRR and AWG pension expenditure projections

Ireland

Net TRR

IE 08

EU27 08   EU27 48

IE 48

Pension Exp % GDP

35 45 55 65 75 85 95 105 115
5 10 15 20 25

Greece

Net TRR

EL 08   EL 48

EU27 08

EU27 48

Pension Exp % GDP

Spain

Net TRR

ES 08

ES 48

EU27 08   EU27 48

Pension Exp % GDP

France

Net TRR

EU27 08   FR 08

EU27 48

FR 48

Pension Exp % GDP

Italy

Net TRR

IT 08   IT 48

EU27 08

EU27 48

Pension Exp % GDP

Cyprus

Net TRR

EU27 08

EU27 48   CY 48

CY 08

Pension Exp % GDP

Latvia

Net TRR

LV 08

EU27 08

EU27 48

LV 48

Pension Exp % GDP

Lithuania

Net TRR

EU27 08

EU27 48

LT 08

LT 48

Pension Exp % GDP

Luxembourg

Hungary

Malta

The Netherlands

Austria

Poland

Portugal

Romania

Slovenia


Slovakia

Finland

Sweden

UK

Source: Commission services

Annex 17:   Possible debt developments over the long-term

Rising government deficits and low growth are leaving a legacy of fast growing government debt ratios in the EU. Going forward, some stylised scenarios for public finances up to 2030 are analyzed. These projections are based on the Commission services' spring 2009 forecast till 2010, which are then extended into the future taking into account the 'lost decade' macroeconomic scenario (see Chapter II).

Scenario 1 shows the outcome for this stylised scenario under the assumption of no fiscal consolidation measures (see Figure 28). The gross debt-to-GDP ratio would rise steadily over the projection period. By 2015, the average debt ratio would be at around 100% of GDP, both in the EU and the euro area. It will continue increasing to around 120% of GDP in 2020, though with large differences across countries.

Figure 28 – EU27, long-term debt projections under alternative assumptions
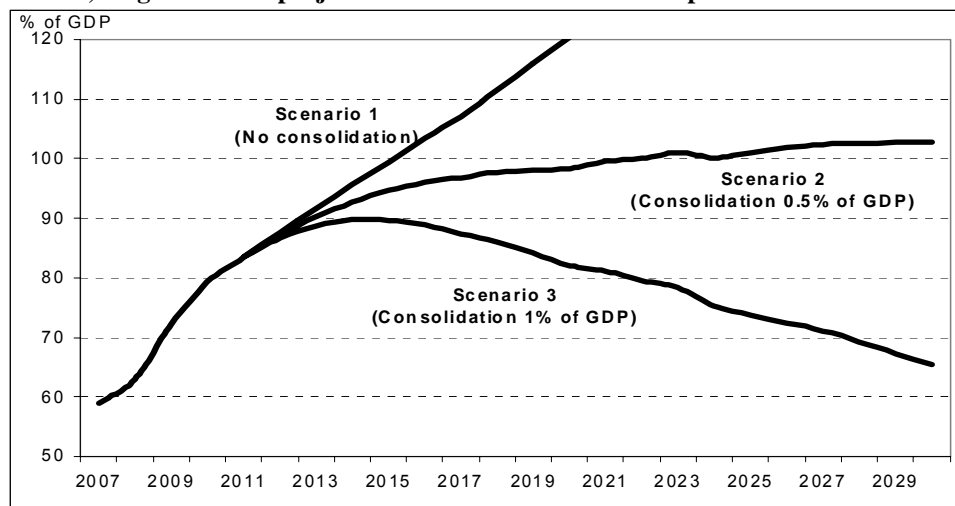
Source: Commission services.

Note: The following assumptions were made:

(i) the increase in age-related expenditure is consistent with the macroeconomic scenario. Age-related expenditure in the EU increases, on average, by 0.4 p.p. of GDP in the EU as a whole up to 2020 and by 1.9 p.p. up to 2030;

(ii) the tax-to-GDP ratios are projected to converge to their pre-2007 level for countries with 2010 tax burdens below their 2007 level. For countries with 2010 tax-to-GDP ratio above the pre-crisis level, it is assumed that the tax ratio remains constant;

(iii) the implicit interest rate on government debt converges to 3% in real terms (as in the 2009 Ageing Report) in 2020 and remains constant thereafter;

(iv) specific stimulus measures projected for 2010 are withdrawn in 2011;

(v) zero stock-flow adjustment; this means no further purchases of financial assets or recapitalisations of financial institutions, nor disposal of such assets.

For details, see the 2009 Sustainability Report.

Figure 28 also shows the results of two further scenarios. In Scenario 2, from 2011 on, all Member States would implement fiscal consolidation efforts (measured in terms of structural primary balance) of 0.5% of GDP per year until they reach their medium-term objectives (MTOs).[26] The graph clearly illustrates that this consolidation effort – which is the benchmark consolidation effort in the SGP – would not be enough to stabilise, let alone reduce, the debt ratio by 2030.

A consolidation effort of 1% of GDP per year (Scenario 3) until the MTOs of each Member State is reached would stabilise the government debt ratio in the EU in 2016. Note, however, that by 2030, the debt ratio would still be substantially larger than in the pre-crisis years, and 5 points above the Maastricht reference value.

Though these scenarios are based on a number of simplifying assumptions, they show that a fast debt reduction requires serious consolidation efforts, sales of assets and may also, in some countries require the update of their MTOs to more ambitious levels. Structural measures that contribute to avoid a 'lost decade' of slow GDP growth would also decisively contribute to an early stabilisation, and then fast reduction, of the government debt ratio.

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[26] The MTOs of Member States based on the 2008/09 round of stability and convergence programmes.

Annex 18: Medium-term budgetary objectives (MTO) and fiscal positions, % of GDP

Table 20 - MTOs in the 2009/10 Stability and Convergence Programmes

	MTO 2009/10 SCPs	Nominal balance			Cyclically adjusted balance		
		2008	2009	2010	2008	2009	2010
BE	0.5	-1.2	-6.1	-5.0	-2.0	-4.5	-3.7
BG	0.5	1.8	-3.9	-2.8	0.0	-2.8	-1.1
CZ	-1.0	-2.7	-5.9	-5.7	-4.5	-5.1	-4.7
DK	0.0	3.4	-2.8	-5.6	3.3	0.6	-3.0
DE	-0.5	0.0	-3.3	-5.0	-1.5	-1.8	-3.6
EE	0.0	-2.8	-1.7	-2.4	-4.1	1.3	0.2
IE	-0.5	-7.3	-14.3	-11.7	-7.0	-11.4	-8.7
EL	0.0	-7.7	-13.5	-9.4	-9.6	-14.1	-8.2
ES	0.0	-4.1	-11.2	-9.8	-4.4	-9.6	-7.8
FR	0.0	-3.3	-7.6	-8.0	-3.7	-6.2	-6.6
IT	0.0	-2.7	-5.2	-5.2	-3.3	-3.3	-3.6
CY	0.0	0.9	-6.1	-7.1	-0.4	-5.8	-6.3
LV	-1.0	-4.1	-8.9	-8.6	-6.4	-6.3	-5.7
LT	0.5	-3.3	-8.9	-8.4	-5.7	-6.7	-6.1
LU	0.5	2.9	-0.7	-3.5	2.0	1.2	-1.4
HU	-1.5	-3.8	-4.0	-4.0	-5.1	-2.2	-2.1
MT	0.0	-4.5	-3.8	-4.3	-4.9	-3.1	-3.8
NL	-0.5	0.7	-5.3	-6.3	-0.5	-3.6	-4.9
AT	0.0	-0.5	-3.5	-4.7	-1.7	-2.4	-3.6
PL	-1.0	-3.7	-7.1	-7.3	-4.6	-6.9	-6.5
PT	-0.5	-2.9	-9.4	-8.5	-2.9	-8.3	-7.5
RO	-0.7	-5.4	-8.3	-8.8	-8.2	-7.8	-6.9
SI	-1.0	-1.7	-5.5	-6.1	-4.8	-3.8	-4.4
SK	0.0	-2.3	-6.8	-6.0	-4.5	-6.4	-5.4
FI	0.5	4.1	-2.4	-4.0	2.1	0.3	-1.4
SE	1.0	2.5	-0.8	-2.3	1.4	1.9	-0.2
UK	:	-4.9	-11.4	-11.8	-5.7	-9.7	-10.4
EU-27	:	-2.3	-6.8	-7.2	-3.2	-5.2	-5.6
EA	:	-2.0	-6.3	-6.6	-2.9	-4.8	-5.1

Source: Commission services, AMECO.

Note: The MTOs are those of the 2009/10 SCPs. The government balances are those of the Commission services Spring 2010 forecast.